ABSTRACT
        These conferences grew out of the decision of the
Guidance Study Committee of the New England Educational Assessment
Project that (1) vocational guidance information systems and (2) the
emerging role of guidance in the schools would be two themes for
worthwhile discussion which could bring together representatives of
the educational community-state and local-whose responsibilities
directly affect guidance services to students. Among the papers
presented under the first topic are (1) "Overview to Use of
Computers" by Jesse Richardson, (2) "An Overview of Vocational
Guidance Information Systems" by Robert Campbell, (3) "Career
Information for Today's Youth" by Glen Pierson, and (4) "Information
System for Vocational Decisions" by Allan B. Ellis. Papers presented
in the second conference include: (1) "Elementary School Guidance" by
George E. Hill, (2) "Relating Guidance Services to Pupil Personnel
Services" by Henry Isaksen, (3) "The Elementary School Counselor's
Role in the Total Guidance Effort" by Harold Cottingham. (KJ)

Proceedings of the
New England Guidance Conferences

CONTENTS

Conference I

Conference II

PROCEEDINGS OF THE NEW ENGLAND GUIDANCE CONFERENCES

Prepared By

THE NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

A cooperative regional project of the six
New England States funded under Title V, Section 505
of the Elementary and Secondary Education Act of 1965

Providence, Rhode Island

November, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

1

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THE NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

FOREWORD

The New England Educational Assessment Project is a cooperative project of the State Departments of Education of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont funded under Title V, Section 505 of the Elementary and Secondary Education Act of 1965.

The overall purpose of the New England Educational Assessment Project is to strengthen the state departments of education of the region by conducting coordinated projects in the areas of educational evaluation, assessment, data collection and dissemination, and instructional conferences. These projects will provide decision-making resources which will highlight current state and regionally identified educational problems.

The Project is administered by a project director who is appointed by the policy-making Board of Commissioners' Representatives. Day to day operations are conducted by full-time directors stationed in each state department of education in New England. Resource personnel for studies and committees consists of state department professional staff, local school administrators, and leading educators from the academic community.

Philip A. Annas
Project Director

A REVIEW OF GUIDANCE ACTIVITIES OF

NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

Richard Dowd – Guidance Committee Chairman

Historical Precis

A general survey of personnel in the six state departments of education was undertaken in April of 1966 to identify major problems in education. The field of guidance received priority as an area that deserved attention because:

1. The National Defense Education Act Title V-A has been in operation since 1958, yet half of the high schools in New England are without guidance programs.

2. Some school systems in New England have recently begun to implement guidance and pupil personnel programs in an integrated manner for grades K through 12.

3. The data and follow-up reports of Project Talent are significant in planning the future role of guidance in the educational program. We should consider implementation of these findings on the local and state level in New England.

4. The student population increase has stimulated the adoption of more efficient techniques for:
   a. pupil accounting and school administration

b. dispensing occupational and
   educational information
c. testing and evaluating
   students achievement.

School administrators and guidance personnel
should examine the use of computers hardware in
solving some of the problems related to the above
topics.

The Guidance Committee of New England Educa-
tional Assessment Project, formed October 1, 1966,
is composed of state directors of guidance, or their
representatives. The Committee outlined the follow-
ing as a statement and guide for further activity:

> Departments of Education should develop a
> model against which guidance programs
> could be evaluated. Such a model in terms
> of programming could serve as a guide for
> policy making on the state and local level.
> A first step, however, would be to establish
> a description of what currently exists in
> terms of personnel, programs, and physical
> facilities in the region. A survey of
> this type would further give direction to
> the establishment of goals and would con-
> tribute to the development of a model.
> This first phase of activity is nearing
> completion.

The Guidance Survey Questionnaire for Secondary Schools

A sub-committee was appointed and charged with
the preliminary research and development of a survey
form.

In surveying previous research it became apparent
that the American Institute for Scientific Study at

6

the University of Pittsburgh had not only thoroughly
researched the American high school today, but had
also completed an in depth study of guidance programs
and personnel. Using the Project Talent tests in
the guidance area, the sub-committee obtained per-
mission to adapt the Pittsburg instruments for the
New England Study.

The Assessment Project Survey Form which evolved
was administered to all secondary school (grades 7-12)
guidance personnel in Maine, Massachusetts, New
Hampshire, Rhode Island, and Vermont. Also, a 10 per
cent sample survey was made in Connecticut during the
1966-67 school year. The response in those states
that distributed the form statewide was above 70
per cent.

Statistical Analysis

The survey results were transposed to magnetic
tape by the Measurement Research Corporation of
Iowa City, Iowa, under the direction of the consulting
firm of Radican Associates of Providence, Rhode Island.
Once the material was committed to magnetic tape, the
systems consultants wrote computer programs for data
analysis which will be the basis of a regional report,
and individual state reports.

The Report

The report of this study will also contain pro-
file information on the guidance worker in New England,
extracted from the Professional Staff Data Form (1966-
67).

The second part of the report will contain des-
criptive analysis with supporting data of guidance
programs and physical facilities in New England's
secondary schools.

Phase II and III of the guidance study will examine
current objectives and develop instruments to evaluate
their success. In the exploratory stage several as-
pects have been surveyed individually; a student in-
ventory of guidance programs, a review of school
populations and their environment, an analysis of
school personnel and the community and their per-
ceptions of the guidance function in the school
setting.

Important Dimensions of Concern

Throughout the monthly meetings of the Guidance
Study Committee, there were certain recurring themes
for discussion. These themes, although somewhat
related to the guidance survey questionnaire, suggested
new areas of concern in guidance practice. These
themes—which we are referring to as dimensions—
were proposed as areas of study for the Guidance Study
Committee, to be developed through working conferences
and publications.

An Over View of the Dimensions

1. Vocational Guidance Information System

The use of new educational media in vo-
cational guidance is emerging from "purely"
experimental stages. Computerized guidance
requires understanding of programmed in-
structions. As new concepts are developed,
a new language emerges. Mastery of both
is essential for continued leadership by
state directors of guidance.

2. The Emerging Role of Guidance in the Schools

8

a. Elementary School Guidance

     The Guidance Study Committee is in
a position to help state directors to
initiate, develop or expand elementary
school guidance programs through pool-
ing knowledge of current practices and
state requirements.

b. Relating Guidance Services to
    Pupil Personnel Services

     The earlier notion of guidance
services is slowly being replaced by
the broader concept of Pupil Personnel
Services. A clearer definition of
Pupil Personnel Services and its re-
lationship to guidance services is both
timely and essential.

3. Establishing Working Relationship With State
    Vocational Technical Directors and Staffs

     It is being proposed that the Guidance Study
Committee establish a liaison with the directors
and staff of state vocational-technical programs
in New England. These vocational-technical pro-
grams are expanding at a rapid rate and are
currently involved in research activity which is
of immediate importance to the Guidance Study
Committee. It is proposed that a series of
conferences be arranged to discuss common areas
of interest and concern; and to consider the
development of joint programs.

4. Establishing Working Relationship With
    Counselor Educators

     A closer working relationship with counselor
educators from New England colleges and univer-

sities could be established through a series of
conferences. Effective guidance programs can
be implemented only if the counselors-in-train-
ing are being prepared for the types of programs
suggested by the Guidance Study Committee.

The Guidance Conferences

The Guidance Study Committee felt that themes 1,
2, and 3 above would provide the basis for worth-
while conferences which could bring together repre-
sentatives of the educational community-state and
local-whose responsibilities directly affect guidance
services to students.

This publication presents excerpts from selected
papers presented at two conferences:

1. Vocational Guidance Information Systems
   January 22-24, 1968
   Manchester, New Hampshire

2. The Emerging Role of Guidance In The
   Schools
   March 12, 1968
   Hartford, Connecticut

CONFERENCE I

VOCATIONAL GUIDANCE INFORMATION SYSTEMS

Manchester, New Hampshire

January 22, 23, and 24, 1968

11

CONTENTS

Conference I

VOCATIONAL GUIDANCE INFORMATION SYSTEMS   <u>Page</u>

INTRODUCTION

Richard Dowd, Guidance Committee Chairman

MAN IS LIMITED by his brain and muscle. He cannot
work alone with the strength, speed, and accuracy he
desires; thus, he has always sought tools, methods,
and machines to enable him to accomplish extraordinary
tasks. The mechanization of mental work has hardly
begun. The extent to which information and control
can be mechanized seems limitless.

Over half of the 19,000 schools in the United
States housing 9,000,000 students in grades nine to
twelve had no full-time-counselors in 1965-66. The
average pupil to counselor ratio was about 740 to 1.

As student populations increase, the duties of
the school counselor are more demanding. It has be-
come apparent to many educators that data processing
could be an invaluable assistance in solving this
tremendous burden in guidance and counseling.

Some school districts are using automated data
processing for both business operations and pupil
personnel data.

As Bushnell pointed out:

"Most of the work involved in the processing of
pupil personnel data is clerical in nature and should
be performed by non-teaching personnel. In practice,
however, much of the work is done by members of the
professional school staff. This misuse of counselor
time has caused administrators to look with more and
more favor upon electronic data processing devices.
It has been estimated that upwards of one-fourth of the
teachers' and counselor's time is spent in clerical

13

tasks involved in handling educational data."

"The counselor's role will become much more de-
manding, because the success of the continuous-
progress approach is almost completely dependent
upon adequate diagnosis of each student's progress
in relation to his long term educational and vocation-
al goals. Student assessment must be performed much
more frequently than in conventional schools, and
the counselor must share much of the load with the
teachers."

It has been extremely difficult to carry out
any large scale guidance program because of the vast
amount of paper work involved. The tremendous in-
creases in student enrollment, an expanding curri-
culum, the drop-out problem, and the pressures put
upon youth to plan their futures, make counseling of
individual students of the utmost importance.

To many the question comes to mind: Can I cope
with the computer; isn't it a dehumanizing monster
that will replace me and make statistics out of school
children? The answer is no; David Sarnoff said:
"The tide of knowledge is overwhelming the human
capacity for dealing with it. So man must turn to
a machine if he hopes to contain the tide and channel
it to beneficial ends. By transforming the way in
which he gathers, stores, retrieves, and uses in-
formation, this versatile instrument is helping man
to overcome his mental and physical limitations.
It is vastly widening his intellectual horizon,
enabling him better to comprehend his universe and
providing the means to master that portion of it
lying within his reach. The outlines of its in-
fluence on our culture are beginning to emerge.
Far from depersonalizing the individual and dehuman-
izing his society, the computer promises a degree
of personalized service never before available to

14

mankind."

We are barely in the second generation of electronic
data processing, and technological innovation does not
wait for those who do not comprehend its uses. Rather,
it is the obligation of those involved in education to
avail themselves of this new tool.

It has now become mandatory for those not familiar
with data processing to understand this new field or be
left behind. For example, in just ten years the typical
electronic data processing machine has become ten times
smaller, 100 times faster, and 1,000 times less expensive
to operate. This indicates a portend for the future.
The computer will continue to grow in usage until it
is truly a universal tool.

More precise statistics to show the trend are: In
1956 there were fewer than 1,000 computers in the U. S.
In 1966 there were around 30,000 and it is estimated
that by 1970 the number will be 1000,000. Ten years
ago these computers were capable of 12 billion computa-
tions per hour; today, they can do more than 20 trillion,
and by 1975 it is estimated they will be able to attain
about 400 trillion. Obviously the threshold of the
computer age has barely been crossed; but it is being
crossed, and those that do not keep up with its ad-
vances will find themselves as out of step with pro-
gress as the horse in the atomic age.

It should be pointed out, however, that for all
its potential to accumulate data and disseminate it,
the computer is still a thing. It cannot see, feel, or
act unless first programmed to do so. As Sarnoff
said: "Its value depends upon man's ability to use
it with purpose and intelligence. If his postulates
are wrong, the computerized future can only be a
massive enlargement of human error." That is why
it is vitally important for intelligent people with

15

creativity to become familiar with data processing and the uses of the computer.

Objectives

Secondary schools have required the use of a large volume of pupil data. These data include test scores, school attendance figures, information regarding students' families and homes, health information, sociometric information, marks, grade – point averages, and information in anecdotal records and school histories. Most of this work is clerical in nature and can be handled by nonprofessional personnel. In practice much of the work has been done by members of the professional staffs of the schools.

The general objectives would be to cut down on the clerical time required of guidance personnel in the performance of their functions, provide for better evaluation of individual student abilities and educational goals, provide information for other schools and colleges, and provide counselors with the facts and analyses necessary in their planning and evaluation of present and future programs in curricular development.

Summary

Some of the advantages to be derived from the use of data processing in guidance and counseling are:
1. Speed
2. Accuracy in that most electronic data processing systems include self-checking devices
3. Compactness of stored data in a highly condensed form
4. Reproduction of test scores in a statistical summary, listed, posted on records, reproduced at other points, and collated with supplementary data,

all from a single source
5. Accessibility in that information
    stored in machine data processing
    systems, when coded functionally,
    may be quickly located

MAN - with the assistance of machines - can better
    serve man.

———

OVERVIEW TO THE USE OF COMPUTERS

Jesse O. Richardson

Today's educational climate is one of change -
change in classroom materials, in teaching methods,
in utilization of technology and the media, in pre-
paration of teachers, in the role of the administra-
tor. There are new curricula in use at all grade
levels, most of them developed over the past ten
years, some still in the process of modification and
refinement. The role of the teacher is changing,
moving steadily away from the traditional course
format of lecture-dominated, lock-step lesson pre-
sentation. He is becoming more and more a coordin-
ator and manager of learning resources, who utilizes
the best materials and methods available in order
to create the most effective learning for each
student.

The responsibilities of the school administra-
tor are changing as he is faced with an ever in-
creasing range of educational and social problems
in his community and in the nation. He must have
readily available to him information resources that
will enable him to make the decisions which will
lead to effective growth and continuity within
his school system.

In order to accomplish this, access to a variety
of information sources becomes an important re-
quirement for the educator today and in the years
to come. Not too long ago, we were told that
knowledge was growing at a rate that doubled

every ten years. Current estimates shorten that time
substantially, and predict a continuing rate of
growth. It is clearly evident that an individual
in today's society cannot, through his own efforts,
benefit from this vast store of information, unless
some means be provided to store, process, and re-
trieve it in a manner suitable to his needs.

This problem is one of the highest concern to
the educator, for modern instructional programs
must be able to furnish the student with the infor-
mation appropriate to his learning needs. This
means that more and more library, textbook, and re-
source materials must be provided - and they must
be accessible to the user, without delay, at the
time that he needs them, and at a location conven-
ient to him. Because of the variety of these
resources, and the complexity of the task of pro-
cessing them, the teacher cannot accomplish this
solely through his own individual efforts. In order
to adequately fulfill his new role as a coordinator
of learning resources, he must seek assistance in
the form of teaching aides and modern technological
tools. With this support, appropriate curriculum
materials can be provided, and instructional
techniques adapted to fit the educational require-
ments of a variety of students.

A device which has these capabilities for sup-
port, and which shows great promise for the individ-
ualization of instruction, is the electronic computer.
It is already involved in our everyday existence to
a greater degree than many of us realize. It is
a major factor in some of the more significant and
permanant changes in our way of life. How the use
of the computer is beginning to produce changes
in the methods and materials of instruction, and
in the administration of our schools, is the subject
to be discussed today.

19

We will look at the ways in which a person -
student, teacher, or administrator - can "talk" to a
computer in a conversational manner, and we will ex-
amine the potential of such computer-mediated discourse
for instruction. We will explore the basic concepts
of computer assisted instruction (CAI), and the re-
lated areas of curriculum design and teacher education
that must be considered in the use of this new kind
of a teaching tool.

A major component of modern technology, the
electronic computer, plays a substantial role in many
of these new developments that are taking place. Al-
though it is a relative newcomer, it is involved with
our daily existence to a much greater degree than
most of us realize. Let's examine some of the ways
it is now serving us.

What Computers Are Doing

Your income tax return, along with millions of
others, is analyzed by a computer at one of seven
regional computer centers. The information contained
in it is checked for accuracy, then sent to a national
center in West Virginia where it is permanently stored
in a magnetic tape memory unit by one of the largest
computers in the world. Your complete tax record
occupies less than one-quarter of an inch of space on
the magnetic tape, yet it can be located and read out
in a matter of seconds for processing or updating.

A library of a quarter of a million medical books
and thousands of medical journals, located at a
national medical center, can be made available through
a computer based system to any doctor in the country.
A request for information is transmitted to the library's
computer system, which processes it, locates the
pertinent material, and prepares a detailed biblio-

20

graphy of it. The information is then transmitted
directly to the doctor who requested it. The time
required to accomplish this - a matter of minutes.

A police officer on patrol spots an automobile
which he suspects may be stolen. He transmits the
license plate number by radio to a central information
bank, where it is checked by computer against a list
of stolen vehicles. Moments later a portable tele-
type printer in his cruiser prints out the identifica-
tion - if the car is stolen, the police go into action.

An industrial designer sits before a screen
which looks much like a television tube. On it he
draws a diagram - say, of an automobile body - using
a device called a light-pen. A computer responds by
creating a visual image of the drawing on the screen.
The designer examines the image, and decides to make
changes in it. Through commands to the computer, he
shortens it, elongates it, modifies it as easily as
one stretches a rubber band. He views it from several
angles, and finally adjusts it to his satisfaction.
The result is an accurate representation, in full
perspective, of the finished article as it will look
when it is manufactured.

An incoming patient talks to the admissions nurse
of a major hospital. The nurse types his personal
and medical information on the admissions form, but
she uses a teletype-writer instead of a regular type-
writer. As she enters each item of information, it is
transmitted instantaneously to a large computer system.
The computer searches its memory for any previous
history on the patient, retrieves his old file and up-
dates it with the new information, and places it in an
active status. By the time that the admissions form
has been completed, the computer has printed out

21

messages at many locations in the hospital concerning
the new patient's needs. It has ordered drugs in the
pharmacy, alerted the kitchen to special diet re-
quirements, scheduled the patient for laboratory and
x-ray examinations, and notified the floor nurse of
the patient's bed assignment. By the time the patient
arrives in the ward, his medical history and chart
have been printed out and are on file at the nursing
station. As any drugs or tests are ordered, or diag-
noses made, they are processed through the computer
system. Every action affecting the patient becomes a
permanent part of his record. Upon his discharge,
his record is stored again in the computer's memory
as part of the hospital's permanent file.

In another part of the hospital an intern is
receiving training in medical diagnosis. Seated at
a teletypewriter, he communicates with a computer
which prints out for him a medical case history.
The computer leads him through the diagnosis step by
step, correcting him when he is wrong and explaining
his mistakes to him. The interaction between the
intern and computer is in the form of a question and
answer discourse, which the user sees printed out at
the teletypewriter. This printed record is stored in
the system for later examination and criticism by
his professors.

Fantastic? - it sounds like it! But it actually
is happening today. It represents what is called
"total information processing", a concept which puts
the power of the computer to work in many ways - as
a library, as a record file, as an accountant and
bookkeeper, as a messenger, as a tutor.

The State of the Art Today

Time does not permit us to describe more than
these few examples of the ways in which computers are

22

being used, but the variety of applications is evident.
Let's examine their capabilities in more detail and
find out what they are, how many are in use, and how
fast they can work.

Ten years ago about a thousand computers were in
use. Today there are forty thousand, including those
used by the military and space programs. It is es-
timated that one hundred thousand will be in use by
1975. Today's computers are ten times smaller, one
hundred times less expensive, and one thousand times
faster than those of ten years ago. They can perform
millions of calculations in thousandths of seconds,
and rarely, if ever, make a mistake. In 1960 there
were about 300 applications for computers - today
there are more than 1000. The eventual number of
applications depends entirely on our ingenuity in
developing them, for a computer can do nothing unless
a person has previously told it precisely what to do
and how to do it. This process is called programming,
and it requires the special skills of a person who
has knowledge of both the internal workings of the
computer itself, and the tasks which it is to perform
for the user.

It would be fascinating to explore all of the ways
that computers are working at hundreds of tasks,
ranging from routine computation to simulation of in-
telligence and thought processes. But our specific
concern is for what the computer can do as a tool for
education - for the student, the teacher, and the ad-
ministrator.

Direct applications to improvement of instruction
and to administration were very limited as short a
time as five years ago, but utilization of computers
in the schools is beginning to grow rapidly. High
costs of equipment made it difficult for school
systems to make use of the computers of a decade ago.

23

Also, those earlier computer systems were not designed
for easy adaptation to educational applications.
Today, the costs to the user have dropped substantially,
and new kinds of equipment have been designed for specific
instructional and administrative applications.

There is other financial support available to the
schools that we can look to for assistance. Thirty
years ago the need for research in teaching and learning
was unrecognized - funding support was non-existent. In
contrast, today, millions of dollars in grant support from
federal, foundation, and university sources is being
poured into research and development programs in mathe-
matics, science, literature, languages, and the social
sciences. The Bureau of Research of the U. S. Office of
Education provides 100 million dollars a year for re-
search and development programs, a large share of the
funds going to the development of new applications of
technology to serve the needs of education.

These programs can be grouped into six general
categories

    1. Computer assisted instruction - the
        use of a computer system for classroom
        instruction and the development of the
        instructional materials required for CAI.

    2. Data analysis and translation - the
        analysis of essays and dissertations,
        translations of printed materials into
        Braille, analysis of work structure and
        speech.

    3. Simulation and model building - the
        testing of theories in simulated situations,
        trial decision making based on projected
        administrative situations.

4. Local and regional data banks - the
    use of a computer for storage, pro-
    cessing and retrieval of large bodies
    of information concerning educational
    programs and related activities.

5. Educational administration - the
    broad application of computers to
    such areas as class scheduling, fiscal
    and pupil accounting, teacher certi-
    fication and placement, school
    planning and management.

6. Training in computer technology - the
    establishment of training programs
    for teachers and administrators to
    acquaint them with computer technology,
    and assist in the development of
    applications in education.

As we examine these areas further, it will become
obvious that each one relates closely to one or more
of the others. In fact, much of the current effort
in the application of computers to education includes
activity in several of the areas. The last one,
training in computer technology, is significantly
important to each of the others, for it is here that
a continual effort is needed to provide trained
personnel to assist the local schools in the applica-
tion of computer technology to their educational
programs.

It is estimated that more than one-half of our
college graduates will have to go into teaching by 1970
in order to maintain a pupil-teacher ratio of 30 in
the nation's classrooms. It is very evident that the
supply of teachers will fall far short of meeting this
demand. Our only answer is to employ technological
aids on a broad scale to provide assistance to the

25

teacher. This will both increase his effectiveness
and enable a much larger number of students to benefit
from his skills. At the same time, we must continue
to move towards our ultimate goal, that of individual-
ization of instruction.

The computer seems to be a device which possesses
the means of reaching both of these goals - teaching
larger and larger numbers of students, and adapting
the instructional program to meet individual needs.
It can do this through its capability for storage,
retrieval, and processing of information. It can
assist the teacher to recognize the variables in
student ability and rate of progress, and modify the
curriculum material to fit individual needs.

The problem that exists is how to supply the
computer with the required materials of instruction
for use by the student, and to provide it with the
programs which cause it to work as an effective aid
for the educator.

Computers In School Administration

Ever since computers were first used in business
and scientific applications, educators have been in-
terested in the ways in which the techniques of electronic
data processing could be put to work for the public
school administrator. It was evident that the business
community had found that the computer could do payrolls,
and cost accounting, keep inventories of materials and
products, maintain detailed day-by-day records of
production, control manufacturing processes, and many
related tasks. However, the use of computers by
school administrators was, at first, relatively limited.
Records show that as short a time ago as 1961, less
than five percent of the nation's twenty thousand school
districts were making use of electronic data processing
equipment. One of the major reasons for this was that

26

those early systems were not easily adaptable to the
kind of information processing required by education.
The software was designed to handle large volumes of
repetitive data analysis by batch processing techniques,
or to carry out the lengthy computations or data re-
duction required in scientific investigations.

There are many clerical and bookkeeping tasks that
can be handled easily by a business-oriented data pro-
cessing system, freeing the administrative staff from
piles of paperwork and speeding up internal channels of
communication. Many school systems are using data
processing equipment or services for these purposes.
We will not discuss this kind of service today for
our purpose is to identify how computers can contribute
to school administration in ways other than the routine
use of EDP. One such application, the scheduling of
pupils in accordance with the requirements of their
courses of study and the availability of classroom
space and related facilities, is typical of the way in
which high speed processing of information has simpli-
fied a major administrative task.

The building of a master class schedule by hand is
a tedious process involving many people. With the use
of a computer, the scheduling can be done during spring
or summer vacation periods without the necessity of
involving large members of teachers and counselors in
the gigantic chore of manipulating pupils, places, and
programs.

Grade Reporting

The reporting of student grades by computer-
based techniques has as a visible result the printing
of report cards indicating achievement and academic
standing at the end of a marking period, and, at the
end of the school year, results of final examinations and
a final grade for the courses. The information which has

27

been supplied to the computer usually contains the
student's name; name and address of parent, student
identification number; year of graduation; previous
credits; name and number of course, teacher, grade,
and teacher comments; attendance information includ-
ing days absent, times tardy or dismissed. The data
cones from several sources in the school, but is
merged in the computer under program control to create
a single master file of student records. Each time
during the school year that new report cards are issued,
the file is updated with new information where changes
have occurred in the previous data.

There are many ways in which this information can
be of further use. By selective processing, the computer
can determine student averages and distribution of
grades for individual subject areas or for the entire
student body. Under-achievers can be identified and
counselors alerted to investigate whatever problems
may exist. By examining the accumulated records of
several years, course selection patterns can be
identified for examination by curriculum study com-
mittees. Information on drop-outs can be assembled to
guide in the establishment of special programs or
course offerings designed to reduce the incidence of
this problem in the school.

Data Bank

Today it _is_ possible to provide this information –
rapidly, accurately, and effectively – by making use of
computer-based techniques. If the data concerning the
instructional program are combined with that concerning
the school plant, school staff, and school services, a
data bank is created. It is the establishment and use
of such a bank of information that we will consider
as an aid to administrative problem solving.

28

The concept of a data bank is contained within
that of a large-scale information system, serving a
number of schools or school systems by providing the
data needed for decision-making with a minimum of delay.
Such a system could serve a county, a state, or a
multi-state region of the country. Regardless of the
number of participants served, the system itself has
certain basic characteristics. It would contain
information on professional staff including name,
address, social security number, and other indicative
data. Degree status, subjects taught or grade assign-
ment, certification status, salary, and similar data
would be stored in the system for all professional and
non-professional personnel. Data on school facilities,
supplies, equipment and fiscal operations would be
included in the system, as well as pupil information
of the type described earlier.

Summary

There are several final points that should be
made. The technical problems of establishing data
banks and information systems are easily within the
state of the art today, but the requirements for
equipment and personnel are substantial. A school
district or group of districts contemplating this
kind of a program must make sure that adequate funding
and operational support is available for a long-range
effort. The development of a data bank extends over
a period of several years; in fact, it grows continu-
ously as new information is added to it, and becomes
more valuable as a result of its growth.

We have looked at some of the ways in which
computers are being used for CAI, and in the develop-
ment of data banks and the establishment of broadly-
based information processing systems. But there are
implications for the educator that extend considerably

29

beyond these applications. During the past decade
we have seen that computers have become powerful
tools for science and engineering, in business, in-
dustry, and management. As this technology is used
in education, what does this mean for the schools?
How will the classroom teacher, the guidance counselor,
the school principal, the superintendent of schools
be involved; how will their roles be affected?

It is the responsibility of the schools to pre-
pare students for effective participation in the
technological world of today and the years to come -
in what will most certainly be a computer-assisted
society. We can help to accomplish this by bringing
them into contact with this new technology as part
of their everyday school experience. A universal
result of the developmental programs in CAI is that
students develop very rapidly an easy familiarity
with the computer system with which they are working.
The system becomes as much a part of their classroom
experience as using a textbook, reference materials,
library facilities, and doing assigned homework.

> Our responsibility as educators is
> to prepare school children to live in a
> world which is theirs, not the one that
> we are so familiar with. We must employ
> as much as possible the tools with which
> they will have to work in the years to
> come. Through the use of a computer
> technology, we can now see the ways in
> which we can provide for and insure the
> continued achievement of quality in the
> instructional programs of the nation's
> schools.

30

AN OVERVIEW OF VOCATIONAL GUIDANCE INFORMATION SYSTEMS

Dr. Robert E. Campbell

The duties of school counselors have become
increasingly more demanding. In a recent survey of
guidance conducted by our Center, it was learned that
counselors would prefer to spend much more time in
vis-a-vis counseling with students, but are restricted
by a myriad of routine "busy work" tasks. For example,
counselors estimated that on the average only 31 per
cent or less of the students had two or more conferences
of at least 15 minutes over the past year; the average
length of time per conference was 16 minutes. Counselors
also reported that although they devoted the largest
block of their total time to individual counseling:
(40 per cent or less), they also estimated that they
spend 21 per cent of their total time in routine tasks.
In 1961, Bushnell suggested that "this misuse of
counselor time has caused administrators to look with
more and more favor upon electronic data processing
devices." Pierce (1967), Hunter (1966), and others
have outlined a lengthy list of possible pupil personnel
uses of data processing techniques and computer
technology as a tool to assist counselors and educators
in the administration of educational programs. These
include for example, test scoring, pupil accounting,
attendance keeping, and analysis, student census,
class rosters, student scheduling, academic simulation,
class book distributions, grade reporting, educational
progress monitoring to identify and project student
educational crises, cumulative records, storage and
retrieval of occupational and educational information,
computer-assisted counseling, and vocational-
educational decision making. Grossman, chief of the
Bureau of Systems and Data Processing for the
California State Department of Education in his

31

foreword to Pierce's handbook, stated that the guidance
counselor has been given the key to a new kingdom (in
the form of data processing) and it is hoped that he
will use it wisely.

The fantasies are now becoming realities.
Approximately three years ago several investigators
began experimenting independently with computer-
assisted counseling. To the best of my knowledge, the
first attempt was that of Cogswell for Systems Develop-
ment Corporation in Santa Monica, California. Cogswell
reported that Kleinmuntz's work on the interpretation
of the MMPI using the digital computer stimulated his
computer-assisted counseling research. He initially
referred to the project on "The Design of Man-Machine
Systems in Education" which was later changed to
"Explorations in Computer-Assisted Counseling." In
the spring of 1965, researchers concerned with this
problem asked our Center to sponsor a research exchange
conference on "Systems Under Development for Vocational
Guidance," which was held in August of 1966, and was
attended by approximately twenty researchers. The
meeting was successful and the conferees agreed to
meet every 6 to 8 months to continue to share mutual
problems and ideas. The second meeting was held at
Systems Development Corporation in late February of
1967, the third in September, 1967 at IBM Corporation
in Yorktown Heights, New York, and the fourth is
scheduled for the spring of 1968 in Palo Alto and
will be hosted by The American Institutes for Research.
Although, for discussion purposes, I have categorized
three major research thrusts, they are not mutually
exclusive and ultimately tend to complement each other.
I think this will become apparent as I describe each
research category and provide a few illustrative
projects as follows:

1. <u>Vocational-education motivational techniques</u>:
   research efforts in this category represent
   new techniques not necessarily involving
   computers and are aimed at producing "ego-
   involvement" in occupational information and
   exploring career patterns, <u>i.e.</u> motivating
   the student to explore occupations and career
   patterns and the appropriate educational routes
   to accomplish various occupational goals.
   There are several experimental efforts under
   development to illustrate this category, for
   example, Sarane Boocock at Johns Hopkins
   University and Barbara Varenhorst from the
   Palo Alto Unified School District have
   developed career games. The gaming technique
   is a simulated experience and is designed to
   give students practice in making the kinds of
   decisions about education, job, family life, and
   the use of leisure time which they will actually
   have to make in their own future lives. (Boo-
   cock, 1967; and Varenhorst, 1967). A somewhat
   different but categorically similar approach
   is being developed by Krumboltz at Stanford.
   He has been experimenting with vocational
   problem-solving experiences for stimulating
   career exploration and interest.

   > A vocational problem solving kit
   > represents a "work sample" of a
   > particular occupation in miniature
   > containing simulated occupational
   > experiences.

   For example, if a student were interested in
   accounting as a career, he would be given an
   accounting problem solving kit which would
   require him to perform sample accounting tasks

33

providing a "taste" of the occupation. If
occupational arousal or interest is still
active after the problem solving experience,
arrangements are made for the students to
seek additional occupational information
and experience, e.g., the student might take
an accounting course or visit an accountant
on the job. Krumboltz envisions a variety of
problem solving kits representing a range of
occupations as well as a series of related
experiments to test and alter the basic theme.

2. Vocational and Educational media techniques:
this category of research is concerned with
designing and testing new procedures and
media for conveying vocational and educational
information to the consumer. The projects
which fall under this topic are experimenting
with modern audio-visual and automated
technologies to stream-line the processing of
vocational and educational information.
Examples of these are the multimedia project
for communicating occupational information to
non-college bound youth under the direction
of Ann Martin at the University of Pittsburgh
(Campbell, Tiedeman, and Martin, 1966); the
San Diego Regional Career Information Center
directed by Pierson, Hoover and Whitfield
(1967), several experimental efforts by Magoon
at the University of Maryland involving audio-
visuals, tape recorders, and variations of his
famous "Juke Box" technique; and finally the
pilot models to computerize employment data
funded by the U. S. Department of Labor under
contract with the Auerbach Corporation
(Behavioral Science Newsletter for Research
Planning, 1967). These models will be designed

34

to develop automatic data processing systems which could quickly match people with jobs and training opportunities. The model data systems will be set up and tested in Florida, Utah, Michigan, and the New York City metropolitan area.

3. <u>Computer-assisted counseling and vocational decision making systems</u>: this category probably represents the most complex research endeavors in that the project investigators are concerned with developing vocational and/or educational computerized decision making systems which encompass a comprehensive range of behavioral activities; not only do they include the communication of vocational and educational information, but also contain numerous computer sub-routines built-in to the system to allow frequent student-system interface through various exploratory decision making or information seeking modes. Probably the best known examples of this category of research are Cogswell's "Computer-Assisted Counseling" project at Santa Monica, California; Harvard's "Information System for Vocational Decisions" developed by Tiedeman et al; IBM's "Guidance Counseling Support System" under the direction of Minor, Super, and Myers at Yorktown Heights, New York; "Project Plan" developed by Flanagan at the American Institutes for Research in Palo Alto, California; the Pennsylvania State University "Computer-Assisted Vocational Guidance Program" for ninth grade boys under investigation by Impellitteri et al; and Oklahoma State University's "Computer-Assisted Counseling" project conducted by Roberts and Frederick.

Although the systems are basically similar in terms of fundamental components, they vary considerably in complexity. Each of them has a conceptual system, input-output sub-systems, storage and retrieval hardware, visual displays, and monitoring provisions. They differ primarily in their ultimate goals, number of sub-systems involved, hardware and software designs, potential capacity, and general magnitude. For example, the Oklahoma State University project describes a network of sub-systems which will provide the client with ten exploratory modes, each involving a different but related client decision, based upon the IBM system/ 350 model 50 Computer Systems, e.g., academic courses of study, vocational courses of study, extra-curricular activities, and military obligation. . . .

I would like to devote the time remaining to a critique of research on guidance systems. I will try to accomplish two things; (1) a synopsis of systems design and implementation problems, and (2) speculate about future implications of system developments. . . .

1. The system model: In establishing an experimental system, one of the first problems (other than acquiring funds), is to theoretically conceptualize and operationally construct a basic model of guidance operations to be performed by the system. At the onset the investigator is plagued with a number of theoretical decisions, such as speculating on the process of vocational choice, the degree of self-direction given to the student, the student's data tolerance (absorption rate) per time interval, individual learning differences, vocational readiness, and the role of periodic "vocational-educational diagnostic evaluations".

36

Another major question has to do with selecting
an operational system model, i.e., should the
model merely attempt to reproduce current
guidance programs as they presently exist, or
should the model be constructed or evolved
from a theory of "what ought to be". Still
another question, is the system over-
emphasizing the rational side of man and
minimizing the importance of his affective
nature in vocational behavior?

2. Data base construction and data input: what
kinds of information will a system need in
order to accomplish its goals? Although the
input data will vary as a function of the
goals and complexities of the system,
typically occupational information, educational
information, demographic data, test results,
school characteristics, and academic records
of the student are included. Most systems
also allow for student input, i.e., the
storage of personal data which are directly
supplied by the student as he interacts with
the system. In addition to selecting the
general major categories of the data input,
the investigator has a number of decisions
to make in regard to organization of the
data, the quantity of data, mode of
presentation, etc. For example, in providing
information about vocational training
opportunities, how should these be grouped,
how much detail should be included, and at
what points within a system's sequence should
the material be introduced? What data bases
should be provided besides the educational
data base? Occupational? Military? Family
and marital? Leisure? How can one provide
access linkage so that movement from base to
base is possible? How can one monitor access

37

and interpretation so that a history of use is
provided and sense of increased complexity in
thought and action plan ensues in conjunction
with use? How can one simulate a "career" so
that a sense of progress and of operation for
progress can be provided for the user?

The inclusion of test results as an imput
represents still another set of problems for
systems researchers - not only are there
problems of quantity and quality, but also
procedural problems of test interpretation
and test administration. For example, what
kinds of information should be obtained through
tests and which tests are the most appropriate
to measure the selected behavioral traits?
Should the system be designed to do the
actual testing or should the testing be done
independently of the system? Similar
questions are asked in regard to test inter-
pretation. Can systems be designed with
enough flexibility to handle the complexities
of test interpretation, not only for singular
tests but for batteries? The researcher
has a number of alternatives for handling
test data and he will probably experiment
with different approaches while attending
to "feed-back" from the client. Another
problem is how to classify and present ed-
ucational and occupational information,
e.g., training and school admission re-
quirements, and job opportunities. One
of the major advantages to the student using
a computer system to assist with occupational
choice is that the system, if properly
programmed, can provide a wide spectrum of
occupational exploration. It can help the
student move from one occupation to another

within a family of occupations, across levels
of occupations, and through career progressions.
To provide this exploration, a complex well-
organized occupational classification system
is needed - one in which the student can explore
on the basis of one or more occupational
attributes (skill requirements, income, etc.).

After a taxonomy of occupations has been
developed, there are further hardware questions
such as selecting optimum media for presenting
occupational information. A sophisticated
system might utilize film strips, audio tapes,
slides, and other innovative techniques. A
system must also include points at which the
student can interrupt his interface with the
computer temporarily and use other modes of
obtaining occupational information, as group
counseling, work experience, and on-the-job
visits.

Somewhat different from classifying
occupations, but related is the concern for a
more comprehensive analysis of the world of
work. Two major questions emerge: (1) How
should the world of work be described and
presented? (2) How much information does
the student need about the world of work to
make sound vocational choices?

An effective analysis draws upon a vast
range of interdisciplinary data, as
sociological correlates, labor economics,
career progressions, and style of life.
Analysis requires movement toward integration
of research from the fields of economics,
psychology, sociology, education, and
anthropology. This kind of data could provide

a more personal analysis for the individual
as he attempts to relate himself to the
world of work. The system could conceivably
pose thought-provoking, longitudinal career
questions of the occupational neophyte. It
could also allow the student to look more
carefully at the series of choice points
involved in the world of work as opposed to
a singular occupational choice. The student
might also have an opportunity to test his
knowledge and perceptions of the world of
work as contrasted with the actual reality
of work.

3. <u>Computer technologies development</u>: imple-
menting an effective vocational guidance
system requires elaborate "software" and
"hardware". As the system is developed
experimentally and tested for its effec-
tiveness, modifications of standard equipment
and the design of new equipment becomes
mandatory. Due to the rapid advances in
computer technology, it is a major task for
the individual researcher to stay abreast of
developments. Establishment of a national
hardware exchange service or a systems
design bank has been suggested. New
hardware could be registered and made
available through this service; proprietary
restrictions could be imposed as needed.
Large scale operation on the order of a
research exchange bank will undoubtedly be
needed in order to make wide spread use of
computer-based guidance systems.

4. <u>The monitoring role</u>: as the student interacts
   with a system, there are numerous occasions
   for intervention (monitoring) by the counselor,
   teacher, and other relevant persons. There is
   no set rule as to when monitoring should occur.
   Monitoring will vary with the individual
   system programming scheme. Most systems
   incorporate intervention points frequently so
   that the monitor or the student can "go off"
   the system as the need arises. Typically
   this will occur when problems become highly
   personal, when "hangups" occur, where referral
   to other resources is needed and/or where the
   student appears not to be ready to continue
   interacting with the system. When the student
   transfers from the computer to the counselor,
   the counselor can have benefit of the student's
   previous interactional record.

   Monitoring should again remind us that a
   system is a tool under the control of both
   the counselor and the student. However, in
   developing a system, clarification will
   certainly be needed as to the frequency, the
   amount, and the kind of monitoring.

5. <u>Subject and settings</u>: although it is generally
   assumed that systems are being developed for
   persons in need of vocational guidance,
   considerable variation exists within this
   population, <u>e.g.</u>, age, educational level, and
   vocational readiness. A senior in college
   may want different kinds of information than
   a junior high school student contemplating a
   vocational education program. There are also
   variations in the vocational guidance setting
   <u>e.g.</u>, Youth Opportunity Center, college, or
   United States Employment Service. Differences
   in subjects and settings greatly influence the

41

input and programming sequence. Although the basic model could be essentially the same, changes would have to be made to account for the specific populations. Most researchers envision flexibility in their models so that the basic model can be easily altered to adapt to other subjects and settings.

6. System inplementation and adoption: another major problem is getting the professional community to accept and use computer systems.

    I have had a number of occasions to ask school counselors and graduate students in counseling for their opinion. I am somewhat disappointed to report that their typical reaction is one of resistance and negativism. Upon further inquiry I find that their reaction is due to a misconception and when they see it as a tool or support guidance system the resistance dissolves.

    In view of this I believe we need to be careful of our public image. I would firmly recommend that we see to it that there are institutes, workshops and conferences, not just to clarify the meaning of computerized guidance services, but to begin to train our professional community on how to use these innovations effectively.

7. Cost analysis: the cost of developing a vocational guidance information system is expensive but I would guess that the magnitude of the dollar figure is deceiving when one considers the potential savings in manpower and informational services. We

should not forget that it is very likely
that initial hardware and staff costs are
at their maximum during the pilot state, and
later taper off. I have heard conflicting
cost figures and since they are conflicting,
I hesitate to mislead you since many of these
are probably rough guesses. However, Pierce
cites what appears to be a rough but realistic
budget guideline as follows:

Canning, Sisson and Associates (3)
pointed out that data processing costs
can'be divided into two phases: the
initial expenses incurred in order to get
into operation, and the day to day
operating costs. The initial expenses
included the systems design costs which
ranged from $20,000 to $300,000; the
programming costs which ranged from
$75,000 to $1,000,000; the physical
installation costs which ranged from
$40,000 to $400,000; and conversion
costs in implementing the new system
which ranged from $30,000 to $500,000.

At present the expenditure for
guidance services in California in 151
districts with approved National Defense
Education Act Title V-A programs averaged
$32.90 per secondary pupil. Salaries of
counselors amounted to $27.43 per
secondary pupil and salaries of guidance
clerks $3.93 per secondary pupil.
Guidance and clerical salaries accounted
for 95 percent of the total cost. In
secondary schools with enrollments of
100-299, the cost per pupil was $37.58,
and in schools with enrollments of

43

10,000 and over, the expenditure per pupil was $33.35 (20).

Information regarding the costs of processing pupil personnel data in districts using manual methods was generally inadequate because the largest cost, that of professional staff time, was concealed. A California study (24) indicated that in districts with data processing installations counselors spent 29 percent of their time on clerical duties; in districts using manual methods they spent 39 percent. No attempt was made to determine the amount of time spent by teachers and administrators on clerical tasks involved in handling pupil personnel data.

It was difficult to prove that costs were reduced at first by the introduction of data processing systems because schools apparently had a reservoir of available help from professional staff members and students who assisted with clerical tasks. The real economy was found in the saving of valuable professional time, energy, and skill as well as in the improvement of the speed and quality of the data processing itself. The meaningful argument was one of human economy: providing for the more professional use of time of staff, for better guidance and instruction, and for the realization of higher education goals (11).

New York

Behnk gave the following figures for a
New York State processing center in 1964:

For enrollment over 12,000

Average machine rental	$17,630.00
Average per pupil cost of machine rental	.89
Average miscellaneous expenses	23,284.00
Average cost per pupil of miscellaneous expenses	1.33
Total expendit	43,924.00
Average per pupil cost for total expendit	2.22
Average equipment cost for data processing	2,999.00

Personnel costs for enrollment over
12,000

Data processing manager	$ 7,257.00
Machine operator	4,227.00
Key punch operator	3,485.00
Machine and keypunch operator	4,400.00
Average total personnel costs	21,150.00
Average number of data machines	9,000.00
Average number of data applications done	11,000.00

On the basis of the experience gained by
the California State Pilot Project, it was
estimated that data processing for a
school population of 35,000 would cost
about $2.28 per year per student for pupil
personnel services. An average cost of
about $3.00 per pupil was found when a
center was processing both student and
financial records for member schools (4).

The California Pilot Project (24)
estimated an entire system could be
processed for a per pupil cost of

45

approximately $3.00 assuming a regional
center serviced a minimum of 100,000
students and a maximum of 300,000 (25).
Bushnell and Cogswell (23) found that the
annual cost of data processing functions
of a school in Southern California was
approximately $21,000 which included a
data processing supervisor, two machine
operators, a key punch operator, a 407
accounting machine, a 519 reproducer,
an 085 collator, a 557 interpreter, an 083
sorter, a 523 summary punch, an 056 punch,
an 026 verifier, and an 850 IBM test
scoring machine (23).

It is obvious that savings accrue
from a variety of sources including
financial. The most important savings
is in the area of providing a means for
professional people to utilize their
time on professional duties. The
regional concept in data processing is
rapidly gaining support throughout the
country.

The counselor and administrator must
be aware of the cost of data processing.
Machinery costs money, forms and cards
and staff cost money. Data processing
salaries are, in fact, embarrassingly
high when compared with teacher salaries.
There is evidence that too low an
investment in data processing does not
pay off. A study conducted by a management
consulting organization surveyed twenty-
seven companies with extensive computer
experience and found that nine companies
had achieved only "average" results and
were still a long way from economical
computer system operation. The "above
average" companies spent more on their

46

computer systems. One obvious answer
is for school districts to pool
resources with a regional center on a
shared time basis.

8. Research study: continued research is needed
    to provide data for implementation and
    continued refinement of a system. Longi-
    tudinal and cross sectional studies on
    occupations, the decision making process,
    the process of learning, career behavior,
    psychometrics, and counselor behavior,
    are critical in providing data bases for
    refining systems. This is a two-way street
    in which research findings can be tested by
    the system and the system in turn can
    identify researchable gaps and problems.

I would like to conclude by sharing some personal
views about the future impact of vocational guidance
systems. First I will list briefly some extra-
polations based upon current system trends and
developments. Secondly, I will raise some questions
about vocational behavioral goals, and finally say
a word about the research potential generated from
systems approaches.

1. Extrapolations and speculations: with current
    technical ingenuity and rapid technological
    advances, one gets the feeling that almost
    anything is possible. For example, the
    commission on the year 2000 predict metered
    computer time available in home or office,
    and high-capacity, inexpensive worldwide

communication by laser, satellites and light
pipes. Individual desk-type computers with
visuals are currently in use experimentally.
It seems that the vocational guidance systems
designer has to project fairly far in the
future or run the risk of having an obsolete
system before it gets off the drawing board.

Now for a few speculations:

(a) Home telephone access to computerized
     vocational-educational information. By
     this I mean that an interested person in
     need of vocational information can direct
     dial from his home to a central computer-
     ized storage and retrieval system which
     not only can provide over-the-phone
     answers to the caller, but can later
     provide a mailed transcript recording
     of the dialogue.

(b) World-wide vocational guidance information
     system via satellite. This is not too far
     away--we have the operational potential
     currently available i.e., technology,
     international professional organizations,
     and an international occupational
     classification system--all that is needed
     is someone to take charge and the spark-
     plug to ignite it. Perhaps the sparkplug
     is closer than we think; the international
     trading of human talent is becoming
     increasingly popular--sort of a worldwide
     placement service. The need for this
     should increase as intercontinental
     travel advances and people take weekend
     sabbaticals to many distant points.

(c) Vocational-education information live by
    closed circuit TV and instant video replay.
    With modern audio-visual technology, why
    do we have to rely on the traditional
    occupational literature--it is very con-
    ceivable that we could capture on video
    tape or close-circuit TV realistic live
    "work samples" of various occupations
    which would be more up-to-date and less
    superficial than our present information.

2. Behavioral goals and outcomes: My major
   concern at this point is to raise
   behavioral questions which might represent
   an outgrowth of our experimentation with
   vocational guidance systems. I believe
   that there is a danger of becoming overly
   enchanted with technological innovations
   at the cost of losing sight of the bigger
   picture. Therefore, we ought to step
   back frequently and ask ourselves such
   questions as where are we going? What
   are our ultimate criteria? Are we
   thinking of specific behavioral outcomes
   or are we proceding in bits and pieces?
   Should our long range behavioral outcomes
   be focused just on the problems of
   vocational choice and career patterns or
   is a larger, more comprehensive problem
   at stake in vocational guidance? I am
   convinced that we should be giving
   thought to something more comprehensive
   than just choice and career patterns. I
   would propose to concentrate on what I
   prefer to call "vocational behavior
   theory" which would include not just choice
   and career behavior, but the more critical
   problems of job satisfaction and job

49

adjustment. In the long run, we could
offer a more complete and comprehensive
service by viewing vocational behavioral
problems in total context. Fulfilling
this task would necessitate an
interdisciplinary approach and a
disruption of traditionalism.

Another possible outgrowth of the
use of vocational guidance systems is
what I will call rejections of simulated
career trajectories. Assuming that systems
become increasingly more sophisticated in
their design and service, the client will
have the opportunity to examine fairly
realistic career trajectories by computer
simulation. This opportunity might result
in the client's more frequent pondering of
the consequences of a given career choice
if he is permitted the benefit of long
range analysis. Wilensky points out that
studies of career patterns show considerable
"moving about" or shifting between field,
e.g., the undergraduate in business admin-
istration moves to law school, the education
major takes graduate work in the humanities
while graduates in many fields move to
schools of education. Project talent data
show that about three in four of all boys
graduating from high school change their
original career goals one year after
graduation. This could mean that there
will be more career choice shifting as the
student benefits from computer career
trajectory simulation and even to the point
that many of society's most preferred
careers, may be rejected as the student
inspects the career-style of life. Of

50

course by the same token other traditionally
less preferred careers may be pursued. We
are beginning to see some of this in the
"organization man" careers. It is reported
that there is a new breed of business
graduates emerging who are rejecting the
modern executive syndrome and related style
of life characterized by minimal time for
the family, ulcers, long hours, and
organizational values in exchange for less
demanding, but more personally satisfying
career patterns and styles of life.

Another question--will more sophisti-
cated vocational guidance by means of
computers bring about changes in vocational
development theory? Will it be possible to
eliminate such events as the fantasy choice
stage or will students in this stage have
the benefit of manipulating the system to
indulge in more complex fantasies? Will
the theory of vocational developmental
states be expedited or altered as computer
programs are adapted to extend into the
elementary years?

Or can we envision computers playing
the role of career "hatchet men" by telling
an unsuspecting client that "although you
have most of the attributes to be successful
in career X, your personality orientation is
not congruent with the psychological work
climate of this career hence further
pursuance of this career could result in
psychosomatic consequences manifested by
insomnia, hypertension, and generalized
frustration".

3 Research Implications: It is obvious that a
great deal of both "software" and "hardware"
research will be generated by our investi-
gations of computerized vocational guidance.
Many of the questions which I have raised
are speculations and untested hypotheses
which could be explored. We still need a
great deal of research on the general
areas of vocational development and choice
theory, the socio-psychological correlates
of work, viable occupational classification
systems, the impact of computer systems on
the sociental structure and many others.

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A REGIONAL CAREER INFORMATION CENTER:
DEVELOPMENT AND PROCESS

Dr. Glen N. Pierson

Rationale

In November 1967, an event that attracted the attention of this nation occurred in the building housing the Commerce Department in Washington, D.C. There is a mechanical device in the lobby of this building which records the current population of the United States. The dial on this device recorded a total population count for this country of two hundred million people in November 1967. Another individual is added to this count every ten seconds. During the time required for the reading of this paper, a number in excess of one hundred will be added to the population of the United States.

This rapid growth in our population and the resultant societal and technological changes create problems for people. Never in the history of our country has the occupational structure been changing at a more rapid rate. During the decade of the 1960's, twenty-six million youth will leave our secondary schools. (6) The types of occupations these youths can expect to find available will increasingly be ones calling for possession of specific job skills.

A substantial majority of the occupations will de-
mand some type of post-high school preparation prior
to labor market entry. (3) (4) The necessity for con-
sidering both vocational choice and type of preparation
will be apparent to a large majority of these youth.
The need for an adequate vocational guidance program
with appropriate occupational information materials in
the secondary school is obvious. However, few
school systems have succeeded in providing appropriate
occupational information materials in a form helpful
to students.

Obstacles arise from both the nature of the
material available from conventional sources and the
means provided for student utilization. Materials
that are currently available come from diverse sources,
have varying formats, and usually lack specificity to
a local situation. In most cases this occupational
literature is out of date, since the time of the col-
lection of the information to its actual publication
is at least a year or more. Some of the materials
have been prepared with an eye toward recruitment and
cannot always be relied upon for the objectivity de-
sirable when students must make choices based on
factual information.

As a result of difficulties in filing and re-
trieving career information, educators as well as
students are often frustrated in their attempt to
utilize even those materials which are available. Al-
though various procedures have been developed seeking
to overcome these difficulties, the results of a
questionnaire administered by the Department of Educa-
tion, San Diego County, indicated that a majority of
the students responding made limited use of the in-
formation contained in typical occupational files. (2)
Clearly, a need existed for current and accurate in-

formation that would overcome many of the difficulties inherent in the usual occupational files and that would provide up-to-date general and local job information for students.

History of Center Development

These difficulties were recognized in San Diego County by the Coordinating Council for Vocational Education as it discussed the difficulties local schools encountered in their attempts to provide current and accurate career information on occupations not requiring a baccalaureate degree. The Council -- made up of representatives from the unified and high school districts, junior colleges, San Diego State College, the California State Department of Employment, and the Department of Education, San Diego County -- agreed that: (1) many school counselors were not able to keep abreast of current occupational information; and (2) much of the occupational literature being used in the schools did not communicate to the students.

In response to Council recommendations, the Department of Education, San Diego County, submitted a proposal to establish a Regional Career Information Center to serve high schools and junior colleges in the area. Partial funding was provided by the California State Department of Education under the provisions of the Vocational Education Act of 1963 (P. L. 88-210). Stage One (February through June 1965) began with the needs study to determine the type of career information desired by students and counselors. Extensive use was made of student reactor panels, advisory committees, questionnaires, and outside consultants.

At the conclusion of the needs assessment, the project concentrated on designing procedures to collect, abstract, synthesize, produce, store, and

disseminate career information that was specific
to those criteria which the consumer -- students and
counselors -- had established.

A model system was developed which, it was hoped,
would overcome some of the traditional criticisms of
occupational literature. These specific criticisms
upon which we focused were: lack of authenticity and
realism; information that was not current and
specific to the local labor market; and the difficulty
in filing and retrieving the data. The objectives of
this model system supported the conclusion of the
Committee on the World of Work in the Detroit Public
Schools which issued the following summary regarding
the type of occupational information needed by
counselor and student: (1)

> To be effective in any guidance program
> which prepares students for the world of work,
> counselors should have the latest information
> about (a) the social and economic trends of
> the job market, and its opportunities and
> changes, (b) occupations in which there is
> greatest demand, (c) opportunity for advance-
> ment, (d) employment security, (e) fields in
> which there are shortages of available workers,
> and (f) fields in which there are shortages of
> competent workers. For each of the specialty
> areas for which training is provided in the
> high school, the counselor needs to be in-
> formed about (a) job opportunities, (b) the
> range of jobs available, (c) related occupa-
> tions, (d) occupational hazards, (e) op-
> portunities for training beyond high school,
> (f) location of training programs, and (g)
> how to make arrangements for the students to
> get such training.

Stage Two of the pilot project, covering the period
from July 1965 to June 1966, concentrated on the

58

hospital service field because of the local job
opportunities and because this occupational field
presented a full skill range from minimally skilled
occupations such as kitchen helpers to relatively
highly skilled occupational groups such as registered
professional nurses requiring a minimum of two years
of college preparation. Information on fifty-five
occupations was prepared and disseminated to six
secondary schools participating in the project.
Agencies contributing substantive assistance were
the San Diego office of the California State De-
partment of Employment, San Diego area junior
colleges, and the Hospital Council of San Diego
County. Evaluation of the project was obtained by
the use of questionnaires. Student reactions to
other occupational literature were also used for
comparative purposes. Since student, counselor,
and administrator evaluation of the pilot project
was highly favorable, the decision was made to sub-
mit a proposal to continue developmental activities
of the Career Information Center.

During the 1966-67 school year, the Career
Information Center project was conducted with partial
funding under the research section 4 (c) of the Vo-
cational Education Act of 1963. During this develop-
mental phase, career information was produced for all
occupations requiring less than a baccalaureate degree
for which training was available in San Diego County
and for which there were local job opportunities.
This information, on approximately 200 occupations,
was disseminated to twelve secondary schools in San
Diego County. At the conclusion of the developmental
stage (June 1967), an evaluation of the materials and
the dissemination procedures secured from students,
counselors, and school administrators in the
participating schools was made. (5)

The Career Information Center is serving during
the 1967-68 school year as a demonstration project
with partial financial support being received under the
provisions of Title III of the Elementary and Secondary
Education Act (P. L. 89-10). This demonstration pro-
ject will enable all school counselors and administra-
tors in San Diego County to become thoroughly informed
on the services of the Regional Career Information
Center. The Center is also serving as a model for
other geographic areas that wish to establish a
similar service.

Method of Operation

VIEW (Vital Information for Education and Work) was
chosen as the acronym for this model career information
system. Career information is produced for all occupa-
tions which require less than a baccalaureate degree
for which training is available in San Diego County
and for which local job opportunities exist. This
information, presently covering approximately 200
occupations, is disseminated to the twelve schools
participating in the demonstration project.

The VIEW center is presently staffed with a full-
time secretary, a part-time clerk-typist, and a part-
time occupations writer. Two guidance coordinators
supervise the preparation of materials, provide liaison
work with participating school systems and other agencies,
and conduct project evaluation activities.

The sources used in preparing the occupational
briefs (called VIEWscripts) produced by the Career In-
formation Center include such publications as the
Occupational Outlook Handbook, commercial publications,
locally produced studies, the Dictionary of Occupational
Titles, and California State Department of Employment
publications. Weekly meetings held with department
employment representatives provide additional data.
Extensive local information is collected from periodic

60

meetings held with representatives from local business, industry, and labor and service organizations, and through telephone contacts with employers and labor unions in San Diego County. Available materials are collected and synthesized, and copy is prepared for the occupational briefs which have a standardized format to present various categories of information.

Each occupation is covered in two four-page VIEWscripts. The first four-page VIEWscript contains general information about the occupation which is generally applicable throughout the United States. The order of presentation, however, differs from that of conventional materials. Instead of beginning with a technically worded lengthy description of the working conditions, the general information VIEWscript introduces an occupation with a very brief statement about the nature of the job accompanied by photographs of workers actually on this job. Then follows a concise but thorough look at the criteria which aspirants must meet including such items as physical health, personality, special abilities, and employer preferences. The second page of the VIEWscript contains a description of the occupation including both its advantages and disadvantages as well as training required and other critical information. The information is presented in this order on the notion that often when a student looks at occupational information, he does not psychologically get beyond the glamourous aspects of the job to look realistically at those items which may ultimately be more important in determining whether he will or will not enter an occupation field. The remaining two pages of the occupation's general VIEWscript contain descriptive data about the requirements and opportunities of the occupation and references to further sources of information.

The second, or local information VIEWscript contains pertinent local information including a list of local institutions that offer training in the occupation, the outlook for each occupation locally, local sources of further information, and when possible a listing of community resource people who have agreed to talk with students about their jobs. Talking with such resource people was rated by the students in the survey sample as probably the best way for them to obtain occupational information. (2) The final page of the local VIEWscript is a check list which permits the student to compare his picture of himself with that presented for the occupation and suggests that he return to his counselor for more information and for aid in decision-making.

When all of this information has been gathered and synthesized into the standard format occupational briefs, a four-phase process places the information in the schools ready for use by the students and staff. In Phase One, the dissemination function of the center is initiated by placing the camera-ready original copy of the VIEWscript page in a processor-camera. The four pages of each VIEWs-ript are photographed together and automatically mounted on one master microfilm aperture card. Since each occupation is covered by two VIEWscripts, two master microfilm aperture cards and produced for each occupation.

Phase Two is the microfilm duplication process in which microfilm copy cards are produced from the master aperture cards by the Career Information Center for distribution to the secondary schools. There are, of course, two copy cards made for each occupation. The first copy card, containing the four pages of general information about an occupation,

can be used any place in the state or nation while
the second card is appropriate only for local use.
The two-card format system thus makes it possible
for general information cards to be prepared at a
central location while the local information cards
can be prepared in each region. Cards could then be
exchanged between regional information preparation
centers.

In Phase Three the aperture cards are key-
punched to provide data processing capabilities for
filing and retrieving the cards. Key-punched in-
formation includes job title, necessary aptitudes,
minimum education required, Dictionary of Occupational
Titles code number, applicable high school subjects,
interests, and other pertinent variables. These
punches are then duplicated in the copy cards.

Phase Four involves both the distribution of
materials and inservice training for participating
schools. After the final step of key-punching, cards
are sent to the participating schools as well as to
the California Department of Employment's local
Youth Opportunity Center. Staff members of the Career
Information Center hold meetings with staff of each
participating school, first to explain the project
and its rationale and later from time to time during
the school year to stress professional use of these
materials in the schools. Counselors than acquaint
students with the VIEW way of exploring occupations.
Students have access to the school's file of micro-
film aperture cards and can browse through them for
occupational information or, more typically, choose
suitable occupations for investigation with the aid
of the counselor.

Students further their knowledge of the various
occupations available using the reader-scanner and
the reader-printer supplied to each project school.

63

On the reader-scanner a student or students may read the information contained on an entire VIEW-script as he projects the aperture card on the viewing screen. Then, if he is interested in the occupation and wishes to study it further or discuss the information with his parents, he may use the reader-printer to take a printout of any page of information on $8\frac{1}{2}$ x 11 paper. The number of print-outs that may be produced from one aperture card is unlimited and the cost per copy is modest. The advantage of this system over the conventional checking out and returning of materials is obvious. Our experience suggests that many students only wish to read the information and the option of taking away the printed copy is not abused.

After finding one or more occupations of in-terest, students can discuss with their counselors and teachers the information contained in the print-outs of the VIEWscripts. At this and subsequent meetings they can also explore and discuss their own characteristics and consequently acquire a sound factual base regarding both themselves and the occupa-tional world. This twofold process will enhance both present and future occupational exploration activities.

What's Ahead?

It is self-admitted that our efforts to date re-present a modest beginning to the Herculean task of providing career information to all students. VIEW-scripts produced to date have focused upon trade and technical occupations, representing but a small portion of the total spectrum of opportunities. It is apparent, however, that the system can be expanded to cover the total field of career information, in-cluding that for professional level occupations.

The next goal for the project is the refinement
of a storage and retrieval system for student cumulative
records, information on higher education, and financial
aid information that will be compatible with the system
used for VIEWscripts. A related goal is that of re-
fining the systems work required for computer storage,
collation, and retrieval of this data. In the mean-
time, the San Diego County Career Information Center
will continue to explore other applications of micro-
film aperture cards to the problem of information
storage, retrieval, and dissemination in guidance and
counseling. When the services of the San Diego County
Career Information Center are fully implemented,
guidance information for counselors and students may be
found "in the cards".

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INFORMATION SYSTEM FOR VOCATIONAL DECISIONS

Dr. Allan B. Ellis

The Information System for Vocational Decisions
which we call ISVD began the first of June, 1966 as
the result of an agreement between the U. S. Office
of Education and Harvard College.

The purpose of this project is to develop an
information system for career choice built on a
paradigm of decision-making proposed by Dave Tiede-
man and Robert O'Hara both of whom are principal in-
vestigators in the Information System for Vocational
Decisions. This paradigm depicts the behavior of the
individual from his earliest confrontation with a
choice situation, to his final analysis of the re-
sults. In its simplest form, it states that there
are two major components in decision-making, ex-
ploration and choice.

An individual having recognized that there is a
problem he must solve enters the stage of exploration-
sizing up alternatives and options, and locating the
risks and consequences--with the aim of structuring
and ordering the universe of choices. The individual
asks: What is available? What are the possibilities?
How do they relate to my goals? What are my goals?
How do the alternatives relate to each other? What
is the universe from which I can reasonably select
a course of action? Once these questions start to
be answered the individual is ready to consider
choice.

One element in the stage of choice is the moment
of choice--that instant at which commitment is made
and begins to grow. This moment is skirted by two
phases, crystallization prior to choice, and clarifi-
cation after the choice. Naturally the actual selection

67

of a course of action is important, but it takes on
its fullest meaning only in terms of these two adjacent
activities. In the crystallization phase of decision-
making, the individual assesses the alternative paths
of action. What are my chances? How have others liked
being managed? How much of a risk is really involved
in each case? The products of exploration are worked
over, pursued, refined and sifted until, finally, a
selection is made.

Then comes clarification after choice, a more ex-
tensive following through of the chosen path, to see
more fully what one has committed himself to and to
test how strongly he maintains his choice. Naturally
it is not a one-way road from exploration to crystal-
lization to clarification. These are not all elements
of choice. Nor are they, in fact, as clearly separable
as the paradigm might suggest.

Throughout the individual's passage from point
to point in the decision-making process, he continues
to engage in the act of turning data into information.
This is a major concern of the project, since in the
real world, data are never complete. Often it is pre-
cisely this incompleteness that makes a decision
necessary in the first place. In any event the quality
of the choice depends upon the quality of the data. Be-
fore one attempts to make a decision, he must first
understand the incompleteness of the data with which
he is dealing.

Accepting data on these terms leads naturally to
the condition that one is more likely to take re-
sponsibility for the choices he makes, since these
choices are not totally determined by external factors.
If they were, then the choice would be either irrele-
vant or superfluous. Furthermore, in order to create
information on which to base decision, one must actively
process data rather than passively be guided by them,

68

and therefore, the individual must become a signifi-
cant agent in the decision process. The incomplete-
ness of data implies that the individual is re-
sponsible for his decisions in both meanings of the
word; he is the one who makes the decision, not some-
one or something external to him; he is the one
who enjoys or suffers the consequences. This is
one way to define "freedom" and it is to this notion
that the project is dedicated. It will achieve this
goal by developing in the student the ability to en-
gage in this kind of decision-making relative to his
career choice. The project will place the student
among resources, enhance his access to them, teach
him the stages in decision-making, and have him en-
gage in the resources in a controlled setting, so
that he can develop the skills of processing data
and making decisions.

An additional factor in the decision-making pro-
cess which this project proposes is monitoring. It
consists in keeping track of the student as he goes
from stage to stage through the paradigm. Aside
from the usual reasons for monitoring student's be-
havior--to analyze his performance--select from al-
ternate courses of action, and generally maintain
an account of his interaction with a system--the pro-
ject expects to present to him the facts of this moni-
toring so that he may use them as additional data.
These facts become a kind of meta-data which the
student processes. The idea of data and meta-data
is analogous to the philosophical notion of being
and becoming. Not only does the individual act
but he becomes aware of his pattern of action.
The desired result is a higher order of understanding
of both the decision-making act and the panorama of
career choice in which decision points are linked.
Career becomes a time-extended set of choices, and
decision at any given point is enhanced by an over-

69

all awareness of the road being travelled.

What the project proposes, then, is a model of
decision-making behavior which requires a setting
capable of providing feedback. It is an interactive
setting in which an individual engages a data base
in certain specifiable ways as a means of determining
alternatives and selecting from among them.

Once we rocognize that data are never complete,
it becomes wise to place the condition on choice
that it be made with the best possible data available.
We must ask of the data: Are they accurate? How
complete are they? Do they reflect the full com-
plexity with which we must deal? Can we get them in
time to explore alternatives adequately?

A library is unsatisfactory in this area, be-
cause the time involved in searching is often more
than the individual can afford. Certainly large
amounts of data--occupational descriptions for ex-
ample--can be stored, indexed, cross-referenced, and
made generally available in a library, but that is
only part of what is needed. The computer is capable
of all of this and of providing fast access so that
search time need not hamper decision-making. Further-
more, the computer can interact with the student and
help him to ask relevant questions about the world
of work. The project looks to the computer as a de-
vice to store large amounts of occupational data
and to make them immediately and selectively available
to the individual as he proceeds through the decision-
making process. With this kind of accessibility, the
individual can feel that he is among resources and as
he becomes more integrated into the reckoning environ-
ment, the data become more like extensions of him and
less like external quantities.

The area of decision-making is the second one which the project sees to be dependent upon the use of a computer. As the student goes through the various stages of decision-making, he must be provided a number of things, three of which are particularly important to us. First, he must have the opportunity to browse through a large set of sources and to obtain cues from the system as he goes. Browsing is not an aimless activity, but it is an unstructured one, and the system should facilitate the emergence of order by probing, suggesting, reminding, and generally being at the disposal of the individual. Second, the student must be able to follow up leads, discard them, go as far as he wishes and then start all over again. There should be available to him statistical projections and estimates about himself and about the world of work so that he may compare his own interests and abilities with those who have taken certain courses of action, and can assess his chances and his willingness to pay the price involved in particular alternatives. Finally, he needs a way to relive his past in terms of his present orientation and to act out his future or at least to bring his awareness of the future to bear upon -his current need to make a career decision. The system, therefore, must contain some kind of simulator or game player which can process student information within the larger context of information about the world of work so that the student can engage in what amounts to a "career game."

All of this requires that there be an interface between the student and the data. In many respects a human being--counselor, librarian, teacher, friend, confidant-would be the best interface, although he would not be very good at treating variables in a multi-variate way or at the kinds of real-time search, estimation, computation, recording and presentation that the system requires. It is in these areas that we look to a computer, since they involve operations

71

which a computer can be expected to do well and tire-lessly. This is not to say that one will replace the other; we have no such intention of replacing a counse-lor, especially since neither the counselor nor the computer in this respect is totally satisfactory. They will be used together, each doing what he does best. The computer then, we feel, is indispensable in an effort to create an environment in which the process of career decision-making is to be maximally facilitated.

A third area relates to the new interpretation of the role of monitoring. We do not limit monitoring to diagnosis after the fact. We conceive of a real-time monitoring and feedback system where the student pro-cesses the data for monitoring on his way to a decision. The way a person engages a subject when he teaches it differs from the way he engages a subject when he studies it. Not only does he think more about the structure and form of the subject as a means of explaining it, but, as a by-product, he learns something more about the subject and from a different perspective. This kind of by-product can attend the decision-making act as well, and we intend to provide the student with infor-mation about the structure and form of his interaction with occupational data, and about his passage through the decision-making procedure, so that he can use facts about himself and the way he goes about making decisions as further active information.

There are three things that our system wishes to provide the student relative to monitoring; the data for monitoring; the facility to reorganize his conception of the process; and the facility to analyze himself in terms of these data. At the end of a given session, the student might be asked to sum up his present situation, to state briefly the reasons behind his chosen course of action, and to describe how he anticipates things will go as a result of this de-cision. Some of this information might be obtained from tests or questionnaires administered by the system,

72

while other information might be in-putted directly
by the student.

It is now clear that the role of the computer,
with regard to data, decision-making, and monitoring,
is crucial indeed. The answer to the question, "Why
ever mention the word 'computer' in the same breath
as 'career decision'?" is that, by its very nature,
the interactive, reckoning environment, which this
project postulates as desirable, requires functions
to be performed which can only be performed by a
computer and then only after considerable effort.
It is the task of the project to explore these
functions in greater detail and to specify more pre-
cisely the interactive model and the things the
computer is to do within it to enhance the process
of career-choice.

A DESCRIPTION OF THE PROPOSED REGIONAL
EDUCATIONAL CENTER
for
New York State
Problems of Implementation

Dr. Morris S. Shapiro

I am delighted that Mr. Dowd offered me this
opportunity to tell you what we are trying to do in
New York State in the area of educational data pro-
cessing.

To understand our approach in the dissemination
of this technology, one must have some insight into
the philosophy by which the New York State Education
Department operates. This philosophy might be summed
up in two words; advice and consultation.

We like to think that the work our department
does is to furnish professional services that provide
a climate in which real educational growth and leader-
ship can work.

To see where we are going let's look back to the
history of educational data processing in New York
State. The first installation in New York State, out-
side of the very large school districts, dates back
only to 1955. This occurred in a small school dis-
trict which used unit record equipment to perform
various administrative tasks. About six years later
we had the first computerized installation in New
York State.

The growth of data processing in New York State
Schools has been little short of phenomenal. The
statistics show that one of every three school dis-
tricts,and there are some 850 operating school dis-
tricts in New York State,utilizes some form of data

74

processing for either administrative or pupil personnel work. Today, there has been a change in this state; not only in the equipment which has been upgraded from simple unit record equipment to computerized equipment and configurations, but also in the philosophy which guides the operation of these pieces of equipment. This has changed from using this equipment for administrative tasks solely to a pupil personnel services orientation. I think this is very important; the fact that we are now using computerized equipment, indeed any type of data processing equipment, not only to do the payroll, but even more importantly to help students, to help guidance counselors, to help administrators. We are also planning instructional uses in academic classrooms, and in providing vocational training.

The State's Education Department has begun servicing school districts with their data processing equipment and the problems that arise from their use, by providing consultant services from the Division of Educational Management Services. However, a basic attitude of the department towards educational data processing has been that in as much as it is an administrative function, it should be administered exclusively by the local school district. The result has been a proliferation of systems and procedures throughout the state, and a minimum of coordination in reporting procedures between local and state units. Some districts have been slow in adapting to the new technology; others have moved too quickly with naive over-enthusiasm and disastrous results.

At the state level we were concerned about two aspects of this tremendous growth. One, the lack of effectiveness in using this equipment economically, and two, the poor communication insofar as reporting was concerned between the local school districts and the state units. In many instances reports were

repetitive, and cost dearly in administrative time.

We did a systems analysis of reporting from the
school districts to these various state departments,
and we uncovered the fact that each school district
completed something like 300 separate reports that
went to the State Education Department. It is amaz-
ing how many reports overlap and repeat themselves or
come out with the same types of information. To combat
this, we have developed the basic educational data
system.

This is a one-time deal where during one day of
the year schools and professional staff members and
students will complete an optically scanning sheet.
These sheets are sent to our Division of Electronic
Data Processing, processed at the rate of 2400 an
hour directly on magnetic tape where they are now
on file. If a teacher should change schools or should
obtain a new degree on one day of each year, she will
update the sheet which will in turn update the "mag"
tape.

The problem of providing uniformity in the myriad
of data processing systems set up through the state still
exists. We have 100 data processing units in New York
State, of which 30 are all in a form of educational
services; that is they are cooperative organizations
that serve individual school districts. They act
similarly to a surface unit, surface bureau we
should say, but they also have 80 individual data
processing units set up by individual school districts:
Each one of them going pretty much its own way. It
was determined that a study should be made of the
possibility of regionalizing the state for data pro-
cessing. Accordingly, a proposal was written and
$115,000 obtained under Title V ESEA. A contract for
this type of study was signed in February, 1966 with
the System Developing Corporation of Santa Monica,

California. The study was completed 21 months later in November, 1967.

I would like to review the rationale of this study and the outcomes expected. There are two questions that we want this System Developing Corporation study to answer for us: (1) is regionalization of data processing within the school districts in New York State possible and (2) if so, will this regionalization be economical in terms of money and services rendered to the school districts themselves. In 21 months the answer came back to both of these questions: Yes.

There are several fundamental reasons for the support of the regionalization plan. Primarily, every school district in New York State will have access to data processing services. It is expected that these services will result in superior information systems for administrators as well as relieving teachers and other school officials of clerical tasks not directly related to the teaching process. Another important reason for encouraging the implementation of a state-wide regional plan is economy. The plan of regionalization, because of a large number of students in a regional area, should result in a minimum per unit cost for a wide range of applications. Another reason related to economy is the standardization of programs in the data base. Last night you heard Mr. Anderson of RAI, Inc. tell you that the true cost in the data processing systems is not the hardware.

You have got to use it on a two or three shift basis. It is the software that costs. A by-product of standardization will be the elimination of the necessity of reindoctrinating teachers and administrators with data processing procedures when they move from district to district.

Finally, I would like to cite an outstanding reason for regionalization; namely, operational control. With

77

operational control there will come into being an
orderly procedure by which men, ideas, and machines
may best interact and be directed toward the solution
of administrative problems by means of data processing
techniques.

The SDC plan was written in five phases. We
started out with a survey of data processing in New
York State. We observed programs throughout the
school districts, and discovered the types of pro-
blems they had. We tried to elicit from them what
they were after in data processing. The final phase
of the SDC report was received with some summarization.
Now, this system description will concern itself with
the criteria for developing the region. We divided
the regional centers so that each one of them contained
approximately 150,000 pupils.

There is one other thing which we purposely omitted.
That was Computer Assisted Instruction. Currently we
have Computer Assisted Instruction in operation in
Westchester County on an experimental basis with IBM
picking up most of the tab, which is $40.00 per pupil.
When the cost comes down to about eight cents per pupil
period, then you'll have computer assisted instruction.

You might also be interested that CAI is being
performed routinely at the state university systems. If
you want to see it in operation, go out to Stonybrook
where they are teaching courses in statistics, mathematics,
and physics using CAI. Or go to the University of
Buffalo which is using it for some mathematics courses.

We are also developing regions on the basis of
physical factors, such as mountains, lakes, valleys,
etc. We also need to remember that in each one of these
12 regions, there was at least one large city. Unless
you have a large city you are not going to get per-
sonnel to operate the data processing center. Three

of 12 regions were designated as evaluation and training
centers.

We are going to evaluate programs and equipment
in these centers. They will be training centers in
that each one of them is adjacent to a university, so
that research and training of potential school ad-
ministrators can take place there. They are also going
to have powered equipment so that they can develop new
ideas. Also, each one of these centers has an unusual
concentration of pupils.

Let me tell you about the types of services we pro-
pose to offer to school system. There are four sub pro-
grams or packages. We have one package, which as guidance
counselors, will make you very happy. It is the pupil
package. Guidance counselors are concerned with such
items as grade reporting, permanent records, test scor-
ing and analysis. In New York State the guidance
counselor is concerned with scheduling. Scheduling is
changing. Where once we had nice little blocks of time,
45 minutes each, newer methods of instruction requires
modules of time. We might have a student that has a
one hour lecture, three twenty minute recitations, and
a two hour lab. In order to schedule him we are going
to have to use one of the newer scheduling techniques.

We also have a personnel package, a financial
package, and a facilities package.

Let me briefly discuss with you some of the pro-
blems involved in implementation. I'd say that these
problems are basically psychological. I think most
of the problem you're going to have to combat, if you
ever hope to get a regional set up in New England is
reluctance to surrender local control.

Another factor is the fear of bigness. People
are afraid of bigness and they are reluctant to join.

79

Another item, again this is for the administrators,
is what I choose to call the "prima-donna" syndrome.
This is where people have developed something that is
all theirs, and they don't want anyone to touch it.

These are some of the more important problems
which will have to be faced in implementing regional
educational centers, but with long-range planning,under-
standing, and innovative thought, this type of re-
gionalization can become a fact.

DEFENSE DEPARTMENT STUDY OF GUIDANCE AND COUNSELING SERVICES IN MILITARY EDUCATION PROGRAMS

Lieutenant Col. Ruth A. Lucas

The process and problems of career choice are as much a concern to the Department of Defense as they are to our public and private schools. Professional guidance services - designed to facilitate career choice - are under study in both the "military" and "civilian" communities. The quality of professional preparation, and the use of the "new technology" in vocational guidance are questions which are equally relevant in whatever setting guidance services are provided. The following study-though it was conducted by the Department of Defense, is similar to a study undertaken by the New England Educational Assessment Project. It serves as a bridge in the presentations of the Second Conference whose theme is: The Emerging Role of Guidance in the Schools.

The Department of Defense Study

The title is "A Study of Off-Duty Educational Services for Military Personnel." The services under study are:

Counseling

Providing information on education and occupations

Testing and evaluation

Advisement

Registration and enrollment

Follow-up

81

A questionnaire was distributed in September 1967 by the Director for Education Programs and Management Training to Education Officers (Advisers) and all other personnel in the Military Department (excluding those in combat areas) who have responsibility for performing any of the educational services described.

The questionnaire was in two parts. Part I - Education Functions - Program Information. This was filled out by the Education Officer responsible for the program.

Part II - Personal Data. This was also completed by all Education Officers and all other persons performing these services.

Purpose:

To appraise current practices, to identify situational factors that stand between an individual and educational opportunities, to provide analysis of the need for more and better guidance by men with pre-service educational deficiencies.

There is evidence that counseling in our programs is not as effective as it should be. We need to know whether selection criteria for Education Officers and Counselors are relevant to the requirement and whether their training is proper. We are concerned as well with the fact that although educational and career development opportunities have greatly increased for the military, there are situational factors like location, mission requirements, command structure, discontinuity of assignment, for example, that make it very difficult for the individual to learn about them or to participate in a meaningful way. Yet in some programs many individuals have been able to work through these difficulties and to take advantage of educational opportunities.

We will describe such programs and the qualifi-
cations of the education officers who manage them. We
will describe the special capabilities needed to over-
come situational constraints.

Our concerns are with guidance services for the
military and we recognize a need for reform. However,
the questions we are asking here are being asked nation-
wide and the need for reform is great nationwide.

Three studies are relevant:

1. "The Role of the Secondary Schools in
    the Preparation of Youth for Employment"
    Institute for Research on Human Re-
    sources--Pennsylvania State University.
    February 1967
    Kaufman, Schaefer, Lewis and others

2. Guidance Survey - New England Educational
    Assessment Project (in process)
    Richard Dowd
    Executive Secretary
    Rhode Island

3. Columbia University Conservation of Human
    Resources Project - Dr. Eli Ginzberg
    (2 year study in process)

I wish to cite a statement from the Pennsylvania
State University study on vocational guidance, "The
Role of the Secondary Schools in the Preparation of
Youth for Employment":

"An evaluation of the effectiveness of vocational
guidance was impossible because so little of it
is being conducted."

CONFERENCE SUMMARY

Dr. George S. Elias

This conference was designed to bring about the more active involvement of the guidance specialist by: (1) making the unknown at least partially known and understood; (2) facilitating communication by bringing together the guidance specialist and the computer-information specialist; and (3) determining the feasibility of Vocational Guidance Information Systems in New England on a regional, state, and local level.

Inroads into these objectives have been made. The formal presentations and lively small group discussions produced, in part, the following:

1. An overview of the mysterious world of computers and their relationship to vocational guidance information systems. As different information systems were described, it became apparent that existing guidance practices are being relied upon quite heavily. A major concern is that current practices are being relied upon too heavily. The question that many are asking at the conference is: "Are we, through the use of the new technology, perpetuating and compounding poor guidance practices?"

2. I'. also became apparent that we were discussing two different uses of computers: (a) an information-retrieval system designed to provide statistical data for the professional; and (b) a system which would provide information and interact with the student who was in the process of

84

decision-making. The manner in which
the computer interacts with the student
and affects the decision making process
is determined in large part by the
"programmer". It is within this context
that the question of "values" becomes
crucial.

3. An important concern of the conference
   participants was directed to the cost of
   such information systems. Must there be
   regional cooperation for such programs
   to be financially feasible? If so, can
   material be developed that would have
   equal relevance to the needs of all students
   in the six New England states? The ans-
   wer again appears to rest with the answer
   to a basic question which must first be
   answered by the professional guidance
   counselor: "Guidance-Quo-Vadis: where
   goest thou".

Summary

A review of the conference proceedings demonstrates
beyond question that the major problem in communication
_is_ communication. Information systems in vocational
guidance are being designed to communicate required data
to the student who is in process of making a vocational-
educational choice. For these information systems to
be meaningful it is imperative that the professional
guidance counselors become actively involved in this
development. This involvement must consist of a de-
termination of the basic content; as well as the "value"
basis upon which this content is to be "handled" by
the student. It is in this involvement that there is
a communication breakdown between the professional
guidance counselor and the computer-information
specialist.

Up to this point the computer specialists have taken the lead. They have build their "value" structure into these systems through the development of the programs and a selection on how these programs will be integrated into the decision making process. That this cannot be allowed is obvious. For vocational guidance information systems to serve the professional need for which they are being designed a collaborative effort must be instituted between the guidance counselor and the computer-information specialist.

CONFERENCE COMMITTEE

General Chairmen

Mr. Anthony J. Zarella   State Senior Supervisor of
                             Guidance, Boston, Massachusetts

Mr. Richard A. Dowd   State Project Director NEEAP
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                             shire

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87

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88

CONFERENCE II

THE EMERGING ROLE OF GUIDANCE IN THE SCHOOLS

Hartford, Connecticut

March 12, 1968

89

CONTENTS

Conference II

THE EMERGING ROLE OF GUIDANCE IN THE SCHOOLS   <u>Page</u>

NEW ENGLAND EDUCATIONAL ASSESSMENT PROJECT

THEME: The Emerging Role of Guidance in the Schools

Orientation to the Conference by Miss Eileen Matteo

It would seem to me that each of us participating in
this conference in all probability must share several con-
cerns and objectives when we think in terms of the theme
under consideration at this meeting. Each of us can claim
an interest in and/or concern for elementary school guidance.
That the need exists to delineate the functions of elemen-
tary school guidance programs and their personnel cannot be
denied. This conference should serve to assist these ef-
forts as we share ideas and discuss current practices.

That a reappraisal of the guidance function of educa-
tion and its relation to instruction and administration
must be set in motion if the schools are to handle effec-
tively the total job that the society thrusts upon them
is recognized. Concomitant with this broader reexamination
of the total educational process has come this reappraisal
of the guidance function. This has resulted in other
specialties within the fields of psychology and education
being integrated with that of guidance to make up the
total package known as pupil personnel services. Coun-
selors are now viewed as members of a team which includes
psychologists, social workers, and health personnel among
others. That a clearer definition of pupil personnel
services and its relationship to guidance services is both
timely and essential cannot be denied. Those of us at
this conference may touch upon, consider, or even assist
in the many attempts to define the functions of the
various individuals who have responsibilities for pupil
personnel services as their primary function within our
schools. Included here, of course, would be the role of
the elementary school counselor.

91

And, lastly, from this conference may result some re-
vealing and, hopefully, objective viewpoints on the role
of special education relative to the team approach. This
conference should help us to look to the future. Certainly
the quality of our services should be enhanced by the
exchange of valuable insights and the integration of view-
points throughout this conference.

It is the hope of the Guidance Committee of the New
England Educational Assessment Project that this con-
ference not only will assist each of us as we attempt to
fulfill our obligations and responsibilities within today's
educational setting, but also that it will prove to be a
stimulating, thought-provoking, and challenging experience
as each of us seeks new and more efficient ways of pro-
viding better services for the youth of our nation.

THE EMERGING ROLE OF GUIDANCE

IN THE ELEMENTARY SCHOOLS

George E. Hill, Distinguished Professor of Education

Ohio University, Athens

Innovations in institutional practices never come easily.
This is as true, perhaps even more true, in educational in-
stitutions as in any of the many other organized agencies and
processes which our society supports to achieve objectives
determined to be of significance to our social order. Why
is change difficult? The answers are not hard to find. In-
stitutions are staffed by people; and people do not change
established habits with ease. Innovation in schools usually
involves changes in the functions to be performed by staff
members. This upsets the comfortable routines of the past.
If the changes being effected entail introduction of newly-
defined positions, to be filled by new personnel, those who
have been on the staff may even see this as a threat to
their "rights", an intrusion upon their well-established
domains.

Resistance to change in schools also arises from very
honest beliefs regarding what the schools are supposed to
accomplish and how these achievements may best be attained.
Such beliefs can be held both by members of the staff and by
community patrons of the school.

The emergence in the past two or three decades of a
strong emphasis on guidance in American elementary schools
has been characterized by the same resistance and misunder-
standings experienced in all significant changes since the
beginnings of tax-supported public education. With a good
many decades of experience and with several significant
forerunners of the current guidance movement to help us, we
should be able to examine the emerging guidance program in

the elementary schools dispassionately from these points of view.

First, there are the forces and the background experiences which have given rise to the serious effort at organized, professionally staffed guidance services in the elementary schools.

Second, there is the question of current theory and practice regarding the functions of the elementary school in our society.

Third, there are our theories and our practices regarding how children may best be helped to develop into the kinds of citizens this complex and demanding culture of ours will expect in the decades ahead.

Fourth, there is the question of how the future of the elementary guidance program is being affected by current practice.

Finally, there is the professional guidance worker in the elementary school, the elementary school counselor.

We would like to examine these five matters in the order in which they are listed. The complexities of these five subjects will force us to treat them here with a brevity which will doubtless leave issues unresolved.

Background of the Current Guidance Movement

Earlier Movements.   It is not possible to understand what is going on in today's elementary schools without recalling what has been happening in these schools since the turn of the twentieth century. Several movements and counter-movements have had an important impact and have produced significant changes in the aims, curriculums, instructional processes, staffing and administration of the school. With no intent to suggest an order of their emergence, these movements may be labeled as follows: The Progressive Education Movement.
                                           The Child Study Movement.
                                           The Mental Health Movement.
                                           The Community School Movement.

These movements did not have their origins exclusively in the schools. Leaders who exercised the most vigorous and critical impact upon school practice often came from the community agencies and university faculties.

Present Forces. More recently and with special impact in the present decade, we witness the development of changes in elementary schools which spring from what might well be called "explosions":

There has been an explosion of knowledge which had pressured elementary school teachers to teach more and more about more and more.

There has been an explosion of fear which has impelled our schools' critics to charge that our teaching is not efficient enough, that we need to teach more and more better and better.

There has been an explosion of population. More and more children come to schools to be taught.

There has been an explosion of concern and of know-how in school practice. Our understanding of what constitutes good education has grown rapidly and our sensitivity to the true needs of children has sharpened.

Finally, there have been explosions of self-indulgence and of inflation which made adequate public support of the schools difficult to achieve.

The first two of these explosions, complicated by the other three, have produced conditions within the typical elementary school which have made the staffs willing and eager to seek help. The typical American elementary school, for example, is grossly under-staffed. The presence of professional pupil personnel workers on elementary school staffs is the exception, rather than the rule. A national

survey of as recent date as 1963 showed this (Smith and
Eckerson).

<u>Current guidance movement</u>. The current guidance movement in
our elementary schools is primarily an effort to make better
use of what we know about childhood education by employing
personnel who can systematize, enrich and enhance the perform-
ance of certain functions which will help children develop
and learn as effectively as possible. Help is being given
by persons with graduate preparation specifically directed
to the needs of the children of the elementary schools and
to the needs of a society experiencing rapid change on many
fronts.

The Functions of the Modern Elementary School

There is a strange mixture of agreement and disagreement
regarding what our elementary schools may reasonably be ex-
pected to accomplish. Doubtless the majority of Americans,
educators and laymen alike, would say the intellectual goals
are the school's main responsibility; yet many of us find it
difficult to see intellectual achievement as an end which can
either be effectively reached or humanely used without equal
attention to the special and emotional development of the
growing child.

For our purposes, we accept the idea that the child
comes to school, first of all, as a whole human being; that
his education -- be it intellectual, vocational and social-
emotional by label -- is going to be effective only as it
considers this child as a unique human being. Thus, the
school must ask itself: What, above all else, are we con-
cerned that a child learn as he moves through these grades?
What do we and this child's parents agree we <u>most</u> want for
this little girl, or this little boy? If we try, for a moment,
to center our attention upon the youngster, and not upon the
long-standing expectations of a school curriculum guide or
the pronouncements of a "society for the preservation of the
fundamentals," we tend to come up with answers much like

96

those I have formulated elsewhere as "the guidance learn-
ings". (Hill, Ch. 2, Hill and Luckey, Ch. 1) Such learn-
ings as these are not the property of some particular seg-
ment of the school staff; they are the learnings that all
good parents, teachers, administrators, counselors and
others want children to achieve:

> The child will mature in his understanding of him-
> self.
> The child will mature in his sense of responsi-
> bility for himself and for the full use of his
> abilities.
> The child will mature in his understanding of
> human relations, how people live together
> harmoniously and happily.
> The child will mature in his skill in inter-
> personal relations.
> The child will mature in his ability to make
> decisions and to solve his own problems.
> The child will mature in his understanding of
> the importance of education and of work in
> our society, in his planning for the fullest
> possible education, and his ultimate partici-
> pation as a productive worker.
> The child will mature in the achievement of
> values and ideals which constitute the core
> of his philosophy of life.

The usual intellectual goals of the elementary school make
such learnings as these functional and usable in our modern
world. They are achieved -- all of these learnings -- in a
school which fosters originality and individuality and which
helps children understand, accept, and know how to deal with
the fact of change in their lives. It is perhaps fair to as-
sert that the ability to meet changing life conditions must
be a central emphasis in all effective learning and teaching
in a modern school.

The school staff that accepts this point of view re-
garding goals sees each child as needing the most accessible

97

and most perceptive possible guidance as he proceeds through his schooling. This staff also sees that this guidance is a responsibility of all the adults in the child's life. But they also see that the systematizing and the professionalizing of the guidance function is most apt to come about if professionally trained guidance personnel are available as collaborators in the school's efforts to individualize and to personalize the child's educational experiences.

Criteria of Effective Elementary Education

How may children best be helped to develop into the kinds of citizens this complex and demanding culture of ours will expect in the decade ahead? The process of education for the young child must be both individualized and personalized. All learning is an individual, personal matter.

This kind of educational process has three characteristics:

1. It is developmental; starts where the child is and takes him along toward where he ought to go.

2. It is relevant; it relates to life as the child sees it, makes sense to him as something he views as worth experiencing because he can see that it makes his living more worthwhile.

3. It is integrative; it hangs together; the parts don't fall apart; one experience does not deny the validity of another experience.

One can see how necessary it is to have a school staff professionally competent and adequate in total time-and-competency characteristics, if these standards are to be met. The teacher needs help in achieving greater depth in her perception of a unique child's current status. The teacher could surely profit by the insights gained through some personal chats between a pupil and a perceptive, accepting counselor. Staff sessions led by a person who has worked

98

hard to assemble all the facts he can about a pupil would help his teacher, the principal, his playground supervisor and the others who have contacts with him to effect a total experience for him which he will find both meaningful and integrated.

Current Practices in Elementary School Guidance

The development of sensible, productive pupil personnel programs in our schools demands that we establish a sound conceptual basis for these programs and that we examine and evaluate practices which seek to put these ideas into practice. Theory is useful and necessary; but theory tested in practice forms the actual foundation for improved programs.

What is currently happening in American elementary schools in the name of guidance? First, it is necessary to clarify a term. To us "guidance" refers both to a point of view and to certain professional functions which are identifiable as sufficiently different from the other pupil personnel functions to warrant their own name.

Impressions from visits to elementary schools in twenty-seven states over the past eighteen months follow:

1. There is substantial agreement as to the need for better guidance for children in our elementary schools.

2. Agreement regarding the purposes of a guidance program in the elementary school is also widespread.

3. This observer has found much agreement regarding the essential elements in an effective elementary school guidance program. What are these elements? One is an enriched program of child study that shifts the emphasis from the child as an object of study to the child in the role of partner in a process of self-study for enhanced self-understanding. A second element

99

is the _counseling service_ for the individual and for small
groups of children. Many teachers and some principals
still see this element as their responsibility. In scores
of schools, however, teachers and principals have long
since accepted skilled, professional counseling service
as an important contribution by the trained counselor.
The third major emphasis in current programs is upon
coordination of the various special services, usually by
the school counselor. This service is tied closely with
better coordination of the work of home and school. The
fourth involves collaborative and consultative work with
teacher colleagues. A final common program element is
the improvement of the school's efforts at research and
development.

4. There seems to be little disagreement that the pupil
services in elementary schools can be better coordinated
and managed. The day of incidental guidance services in
many elementary schools is past. Most schools are too
dreadfully under-staffed to have an adequate team effortt.

The Elementary School Counselor

Our fifth generalization from visits to elementary schools
is that elementary school counselors have emerged in hundreds
of schools as professional staff members accepted by their
colleagues and performing important functions as indicated in
our list of program elements in item 4 above.

There have been various titles given this guidance worker.
It is my conviction that he is best called a school counselor.
This was also the decision of the members of ACES and ASCA at
the 1966 convention when asked to vote on the matter after
hearing the ACES-ASCA joint committee report on the elementary
school counselor.

The duties of this worker are emerging in current theory
and practice. There follows an example of what one state group
developed by way of role definition, a definition which I
accept and which comes very close to what is most commonly
found in current school practice.

100

The <u>elementary school counselor's</u> duties are emerging from guidance program development, from theoretical considerations, and from proper adaptations of our long experience in various phases of pupil personnel work at all levels of education.

1. To provide services to children through counseling.

2. To provide assistance to teachers as they seek to meet the needs of the children.

3. To provide assistance to children through the conduct of small group sessions involving children with special common needs or problems.

4. To provide teachers with help in the achievement of understanding children.

5. To serve as a resource person with parents, in assisting them to provide home environments that will contribute to the best development of their children.

6. To serve as a referral agent, assisting with the proper referral of children to psychological, health, social service, and other special services both in the schools and in the community.

7. To serve as an aide to other staff members in effecting proper referrals for children needing assistance from other specialist or agencies.

8. To serve as a resource person, with the principal and others, in the organization of a guidance program that is continuous throughout the school system and is properly articulated with other school systems.

9. To take leadership in the coordination of the total program of pupil personnel services through continued planning and cooperative work with the whole staff.

10. To serve as a resource person in the planning and
    conduct of such inservice and school planning
    activities as are needed to keep the school program,
    and the guidance program in particular, in a constant
    state of improvement.

One of the serious lacks in the education of elementary
school counselors is proper consideration of the wide scope
and complexity of their duties. Thus the usual one-year,
master's degree program is inadequate. There need to be many
new efforts to up-grade the preparation of the elementary
school counselor through university-school system cooperation
in on-the-job advanced preparation. This, in our opinion, is
the only way we are going to achieve much by way of the equiva-
lent of two years of graduate education, either for the
elementary or the secondary school counselors.

What of the Future?

As we look into the decades ahead, can we hope for the
development of theoretically sound and practically feasible
guidance programs in our elementary schools? Perhaps an
answer to this can be given by indicating what we see to be
the liabilities and the assets of the guidance movement in
1968.

The Liabilities

Newness, the recency of its inception into the elementary
schools as an organized effort, is one of the distinct handi-
caps of the current elementary school guidance movement.

The rise of a strong academic emphasis in all aspects of
America's educational programs is a second handicap. Essential-
ly, this has been a move to revert to a narrower conception of
educational purpose which places intellect first and, un-
fortunately, seems at times to have sought to isolate the
child's mind from the rest of his being.

102

A third liability of the elementary school guidance move-
ment is the seeming indifference or ignorance of too many
guidance personnel regarding the significance of this develop-
ing emphasis in the elementary schools.

There is little doubt of the skepticism of many teachers,
administrators, school psychologists, school social workers
and other educators regarding this thing called "guidance" in
elementary schools. To a degree, this skepticism is a whole-
some and helpful force. Enthusiasts need to have their bubbles
pricked, if their proposals are of the bubble quality. An honest
doubter can often do as much as, or more than, an exuberant
proponent in the orderly and sensible development of a program.

A fifth handicap of the guidance movement in elementary
schools is the dearth of major research efforts to provide
the theoretical and the applied bases for program development.

Professional groups jockeying for the maintenance of power
and position constitute an unfortunate block to program develop-
ment in some situations. This handicap is usually the consequence
of the failure of pupil personnel leadership to bring the various
staff personnel together in frank and cooperative study of the
needs of the children of the schools.

The slowness with which well-defined programs for the
presentation of elementary school counselors and guidance
administrators have come into being in the universities is a
cause of considerable coacern for the future of the guidance
movement. Many universities still are providing only minimal
opportunities for elementary school counselor preparation.

This is not an encouraging picture, but it is our belief
that it is an honest one. But all is not lost! There are
also a number of significant assets and rapidly developing
forces in American education.

The Assets

The presence on thousands of elementary school staffs of
well-trained, professionally-minded, child-centered teachers

103

is the greatest asset of the elementary school guidance move-
ment. Add to this the fact that many of the principals of
these same schools are men and women dedicated to, and skilled
in, meeting the needs of the children in their schools, and
one is encouraged by the context within which significant
programs of guidance are forming in hundreds of elementary
schools.

A second contributing force of great potential is the
growing leadership and resourcefulness of state departments
of education in this field.

The burgeonning of professional organizations, both in
number and in strength, constitutes a hopeful force in the
elementary school guidance movement. Counselors in the
elementary schools are pushing for greater recognition in the
American School Counselors Association. They have gained
support for their own publication. The tremendous growth
of inservice programs of study and development in local and
state school systems is a fourth great asset.

Fifthly, the impact of Federal fundings on a variety of
elementary school guidance programs has been pronounced.
Such fundings have affected both local and state program
development efforts, even though problems have arisen concern-
ing the staffing of these projects and the sharing of the
findings.

A sixth and last asset is difficult to define as a
specific force or as the consequence of the efforts of a
particular group. We refer to a distinct and important change
in the general climate of thinking and concern in American
life. Perhaps the simplest way to characterize this is to
say that we have been experiencing a revival of concern for
children as human beings. There has been a distinct reaction
against the narrow intellectualism of the fifties, and a
much greater concern for the broad education of children
for humane and responsible citizenship.

104

A recent development which promises to provide much needed help in staffing sound programs is the use of properly-prepared guidance assistants for some of the more routine, sub-professional services both counselors and teachers are commonly expected to perform.

Those seeking to exercise leadership for better services for children work today in an atmosphere that is both difficult and encouraging. It has always been thus, and will always be, for the professional who seeks to increase the effectiveness of his work. Above all, we would plead that in the days ahead educational efforts be constantly focused on the primary objects of good education: the individual child. When the individual educator, or any group of school staff members, keeps this focus, we need have little fear that selfishness, ignorance, or ineptness will long prevent the development of effective educational programs for the children at hand.

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RELATING GUIDANCE SERVICES TO PUPIL PERSONNEL SERVICES

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The implication of the conference theme is clear: guidance
has not yet fully emerged in the schools. This is undoubtedly
true although many of us have felt during recent years as if
the role of guidance in the schools were fairly clearly defined
even though there is much yet to be accomplished in terms of
implementation. The problem, as I see it, is not lack of agree-
ment as to what constitutes the guidance services; nor is it
confusion over how it should be organized and administered.
Rather, the problem is our failure to convince the public at
large and our fellow educators, that guidance services con-
stitute as important a phase of our educational program as
do the instructional and administrative aspects of the school
program. Part of the problem, I'm sure, is a semantic one
which stems from the "confusion of tongues" that exists through-
out the educational establishment.

Clarification of terms will help us to communicate more
effectively to the various groups of people who must be con-
vinced of the need for improved guidance programs in our schools
before we can achieve the full realization of our objectives.

Much of the confusion stems from uncertainty concerning
the meaning of terms like "guidance", whether it be used as
a noun with such deceptive adjectives as "elementary school",
"group", "educational", "vocational", or whether it be used
as an adjective to describe a person, a program, a function,
or a group of services. There is also confusion concerning
the meaning of such phrases as "pupil personnel services",
"student personnel services", "guidance counselor", "counsel-
ing", etc. I should like to propose a concept of the educa-
tional program which has the potentiality, at least, of

setting these various phrases and terms into their proper relationship with each other, thereby eliminating some of the confusion, and describing how guidance services relate to and are coordinated with other pupil personnel services.

Basic to this concept is the notion that the educational program includes three rather distinct but overlapping functions: the instructional function, which is carried out primarily by the teaching staff; the administrative function, which is carried out primarily by the superintendent, principals, supervisors, and others especially designated as administrative officers; and third, the guidance function which is carried out primarily by school counselors, school psychologists, school social workers, and other specialized personnel workers. Within such a framework, the term "pupil personnel services" designates the segment of the organized educational program which is designed to provide for "the guidance function" in education. It has as its primary objective the helping of each pupil to get the most out of his school experiences. "Pupil personnel services" include the following:

1. Health Services. Since the health services are primarily non-instructional in nature, they should be included under the heading of pupil personnel services rather than under the heading of instructional services.

2. Adjustive Services are a part of the pupil personnel services program. These include the help provided by school psychologists, school social workers, and school psychiatrists. The school should concern itself with all those aspects of pupil's life which have a direct, immediate and lasting influence on his ability to learn.

3. Remedial Services also may be classified under this heading. These include speech and hearing therapy and remedial reading. Since the identification of students who have special needs in these areas and the diagnosis of these difficulties are certainly not instructional in nature, a case can be made for including

the entire range of remedial services under pupil personnel services.

4. Pupil Accounting may be considered either part of the guidance function or the administrative function. To be sure, pupil accounting includes elements of both. Such activities as taking the school census, enforcing compulsory attendance laws, determining attendance boundaries, etc. may be done by an administrator who is sensitive to the guidance implications of these activities, or they may be performed by a guidance specialist who has the necessary administrative authority to carry them out.

5. The Guidance Program is the heart of the pupil personnel services. However, as implied by the inclusion of four other headings under this general category, it is clear that the guidance program in and of itself does not adequately provide for the guidance function in education.

Counseling is the heart of the guidance program and hence of pupil personnel services. When thus conceived, counseling becomes the focal point around which the rest of the program rotates. By counseling, we mean a unique kind of a face-to-face relationship between pupil and counselor which is based upon a recognition on the part of the pupil of his need and desire to talk with the counselor. It is unique in that it is non-evaluative and non-judgmental. It is characterized by a special brand of mutual respect, a special type of communication, and by a genuine and complete acceptance of the pupil by the counselor in such a way that the two of them together can concentrate on the needs, problems, and feeling of the pupil. It is not reasonable to assume that teachers, most of whom have had no special training in counseling, can perform this function effectively. They may, of course, contribute to the carrying out of the guidance function in education.

It seems obvious that if it is to be completely

effective, a program of pupil personnel services, designed to provide for the guidance function in education as here broadly conceived, must be organized to represent the entire range of the pupil's school experience. A pupil at any grade level should have an opportunity to discuss matters that concern him with a professionally trained counselor. He should also have the services, whatever they may be, that will enable him to get the most out of his educational experiences. In a very real sense, the entire pupil personnel services program must be pupil centered.

If we think of the guidance function in education as that portion of the educational program which is provided through the division of pupil personnel services and if we see the guidance program as only one of several programs designed to provide for this guidance function, we should be able to avoid some of the confusion which usually attends the use of the term guidance. Also, if we accept the idea that counseling is the unique relationship described, we can eliminate much of the confusion that results from the use of this term to apply to practically any person-to-person or any face-to-face relationship.

If we can convince school boards and school administrators that there is wisdom in organizing the administrative structure of the schools on the basis of these three functional divisions - the instructional function, the administrative function, and the guidance function, - we can contribute further to the elimination of confusion.

Let us look specifically at the question of how to relate the guidance services to other pupil personnel services. If we can agree that the entire range of pupil personnel services should be administered by a second-echelon school official who is professionally trained in this area of specialization, we can rest assured that part of the problem has already been solved. In other words, all pupil personnel specialists - school counselors, school psychologists, school social workers, speech and hearing specialists, school nurses, school

109

psychiatrists, and remedial reading specialists - will hold
positions in the division of pupil personnel services. There
should be no confusion if the entire range of pupil personnel
services is under the administrative authority and responsi-
bility of a director. The need for clarification of roles
and careful delineation of lines of responsibility is apparent.
Also apparent is the need for a carefully conceived table
of organization. When all types of professional people
working in a school system are recognized as equally important
and as comparable in their level of competence, there is
a much greater likelihood that cooperative relationships
will be maintained and that the various specialists will
coordinate their activities with others who are working with
the same children. Details as to how the program will
operate, and who shall handle specific kinds of cases must
be worked out. As long as we all focus our attention on the
pupil and his needs, rather than on each other or on any narrowly
conceived notion of who is best qualified to help a given pupil,
we will succeed not only in relating guidance services to
the broad range of pupil personnel services, but also in
relating the pupil personnel services to the instructional
and administrative services of the schools to the benefit of
every child during his entire school career.

AN OVERVIEW OF ELEMENTARY SCHOOL GUIDANCE

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I.   Historical Review of Literature

In spite of the many recent publications in the field
of elementary guidance and counseling, few, if any, have
devoted much discussion to the theoretical bases for either
the guidance function or the counseling process in the
elementary school. This situation is due to a number of
factors, not the least of which is the lack until recently
of solid, creative or empirical research leading to the
nature of guidance theory, regardless of educational level.
The current concern for developing acceptable theoretical
formulations of purposes, functions and practices characteris-
ing the guidance process or function in education is pre-
dicated on the need for independent theories of guidance
(Kehas, 1966) not immediately derived from other disciplines.

Guidance and counseling in the elementary school
appear to be seen in a contextual relationship with several
larger elements: the goals of education, the guidance
function in education, the guidance function in the elementary
school, implementation of the guidance function through the
guidance process, and guidance and counseling outcomes.
Within the broad goals of education, the guidance function,
as distinct from instruction, emphasizes decisions, goals,
plans and value judgments, while instruction stresses the
acquisition of knowledge, skills, concepts, and facts
(Cottingham, 1962). With few exceptions, the developmental
character of educational experiences as described by Mussen
(1963) is strongly supported by those concerned with the
definition of the elementary school guidance function.

In implementing the guidance function at the elementary
school level, many authorities agree that it is carried out
both within and beyond instruction.

Assessing the outcomes of the guidance process calls
for an examination of human behavior changes in terms of
(1) the acquisition of skills, knowledge and facts (societal
expectations) as well as (2) maturity as related to reality,
others, self, and values and meaning (self needs).

Although no postulated theories of guidance applicable
to the elementary school currently exist, Munson (1966) has
developed "A Rationale for Elementary School Guidance" which
gives serious consideration to the social and psychological
origns of guidance at this level, drawing upon Bloom's (1956)
cognitive domain, Krathwohl and others (1964) affective domain,
and on Bruner's (1964) theories of instruction. Grams (1966)
proposed a "learner-centered competence building theory" as
a postulated base for elementary school guidance. Faust, a
third theorist, bases his position on the assumption that the
primary goal of public education is the development of in-
tellective or cognitive processes, i.e., knowing how to read,
manipulate numbers or other content material. Thus the
guidance function of the teacher or counselor centers upon
the shaping of a learning climate which will free children
to learn, recognizing that anxiety, fear and other defensive
posturing inhibits the learning process. Faust's primary ob-
jective for guidance appears to be learning efficiency in
subject areas.

II. Characteristics of Guidance in the Elementary School.

   A. Purposes

The purposes of guidance, or of the guidance function in
education, must be compatible with the broader, more inclusive
goals of the elementary school. Initially, it is possible to
broadly categorize sources of objectives to meet pupil needs
into (1) studies of learners (psycho-social concerns) and (2)
studies of society (cultural heritage). In turn, activities

112

developed to implement these goals are sometimes dichotomized
into guidance and instruction, although obviously neither is
mutually exclusive.

Several specific purposes can be cited to explain the
goals of guidance activities in the elementary school. One
significant purpose of guidance work at this level is the
development of a sense of responsibility and self-under-
standing that permits the child to react with confidence to
his environmental demands and explore with personal security
choices open to him. The outcomes of this goal, if success-
ful, should be an awareness by the child of his unique self
as the central figure in a meaningful existence, strengthened
by freedom derived from responsible interaction with life's
challenge. Another non-academic learning associated with
guidance is pupil assistance in making decisions resolving
personal concerns and working toward emotional maturity.
This goal of personal adequacy stresses removal of intra-
personal conflicts which, when reduced or eliminated, give
the child psychological freedom to accept himself and thus
be able to function at a higher intellectual level. A
third purpose of guidance activity with elementary children
is that of social development, including not only inter-
personal communication skills, but an appreciation for and
an identification with proper value judgments expected by
society. A final goal of guidance centers upon aiding
youth to acquire an understanding of the role of education,
work, and leisure time in an increasingly complex occupational
world. This purpose assumes provisions for children to
continually evaluate their own educational and vocational
capabilities in relation to our ever changing employment
opportunities and requirements.

B. Characteristics

Essentially, as Patouillet expresses it, guidance is
seeking a greater degree of self discovery and fulfillment
through educational experiences that are meaningful to the
individual. Expressed differently, guidance stresses

113

individualized education which aims to strengthen the uniqueness of the child by releasing his native potential to react freely and individually to the knowledge transmitted by his school and non-school environment.

One or two other characteristics of elementary school guidance also need identification. The developmental approach to the establishment of guidance functions where both preventative and remedial features are evident is commonly supported. The cooperative involvement on an organized basis of administration, faculty, and special staff is another basic condition. Finally, it is suggested that although guidance focuses on a variety of pupil problems, a four-fold category of personal (self-understanding), social, academic, and career concepts may prove to be useful.

C. Personnel Responsible

Several professional groups including administrators, area resource personnel, and teachers have a distinct responsibility in the guidance area. A basic concept underlying this position is that if guidance as a type of educational intervention is to have a unified thrust, it must reach the pupil through a variety of contact points. Every teacher has a guidance role which complements her instructional role. Though they are distinct areas of action, these roles may often overlap.

The counseling service in the elementary school (at the moment) is not clearly identified with one professional person. The school counselor may share responsibility with the school social worker or the school psychologist. Titles, too, are not commonly used, and no one title has been accepted generally by those engaged in counseling (and guidance) in the elementary school.

The exact nature and role of the counselor in the elementary school has not been clarified to the mutual

satisfaction of teachers, guidance workers, administrators,
and other personnel specialists. Some research and con-
siderable theorizing has been done, however, which points
up a possible classification of duties. Broadly speaking,
the elementary school counselor has three areas of re-
sponsibility: (1) counseling with students, (2) consulta-
tion with teachers, parents, and other school personnel,
and (3) coordination or leadership in guidance functions
of the total school.

III. The Counseling Function

A. Counseling Goals

The goals of the counseling process in the elementary
school, while not easily circumscribed by particular areas
of pupil concern, appear to focus on four types of pro-
blems: (1) self-understanding and awareness, (2) social
acceptance and identification, (3) academic integration
and success, and (4) career orientation and values. Process
or outcome goals include both immediate and long-range
objectives. The former stresses current client under-
standings and happiness while the latter emphasizes future
growth and development in relation to personal objective
resources.

B. The Helping Individual

More than technique or clear-cut methodology, success-
ful elementary school counseling depends on the personal
characteristics, value structure and professional skills
of the counselor (or teacher). Probably the most important
personal quality is that of openness to new experiences,
acceptance of others, and awareness of the available per-
ceptual field. To free others to learn, the helping person
tends to be non-authoritarian and open to new experiences
related to his own needs and defenses.

The professional skills of the elementary school
counselor, while based on a sound comprehension of the

115

school as a social system and the dynamics of individual
behavior, must center upon a repertoire which permits an
accurate assessment of pupil needs and characteristics
and a range of assistance measures for bringing about
suitable behavior changes. As related to the personality
of the counselor, the ability to listen and identify
meaningful pupil cues with affective features is one of
the most important qualities. Responding in a manner
which permits frank review of the pupil's action but
clearly reveals acceptance of the child as a person
complements the listening skill of the counselor.

C. The Counseling Process

The process of developing a helping relationship
with an elementary school child rests upon several basic
assumptions, accepts certain goals, and relies upon a
variety of procedures. The objective of the helping
person is to assist the child in the process of learning
more adequate self-perceptions by helping him in the
interpretation of his experiences so that his own in-
trinsic nature is given creative individual expression.
The basic element is a personal relationship which,
rather than depending on manipulation or objective be-
havior analysis and accountability, fosters an at-
mosphere of self-exploration and results in meaningful
self-enhancing experiences related to attitudes, values,
and beliefs.

The procedures accompanying an effective counseling
exchange with an elementary school child center upon
attempts to see what an experience means to the child
in relation to his own self-perception. Based on the
assumption that learning is a result of change in per-
sonal meaning, the chief approach must involve an at-
mosphere in which the child feels free not only to ex-
amine the significance of his own experiences, but is given
the opportunity to choose new responses and thus reor-
ganize his experiences, voluntarily. The entire pro-

116

cess must focus on human involvement, based on a one-to-
one intrinsic experience which is largely affective, in-
ternally derived, and maximally expressive for the child.
Certainly, a teacher or counselor must be critically
alert to his own psychological defenses as well as the
extent of his willingness to let others be themselves if
he hopes to establish a climate in which a child can feel
accepted, understood, and free to explore life.

D. Possible Unique Features of Elementary School Counseling

Although both research and practice are necessary to
confirm the distinctive value of particular procedures
uniquely applicable to elementary school counseling,
several such operational approaches can be tentatively
suggested. A basic advantage often accruing to the ele-
mentary school counseling situation is the stimulus of an
opportunity open to those fortunate elementary pupils
who find themselves the center of a one-to-one encounter
with a helping individual. Other more limiting differences,
also distinguish elementary counseling efforts. Because
of the subtleties of the communication process, greater
reliance on non-verbal cues and counselor structure may
be necessary. Too, the ambiguity of the relationship
with variable tempo, effect, and content may require
greater flexibility and sensitivity on the part of the
counselor. Specific techniques, such as play materials
or other media, may be useful as energy occupiers as the
child verbalizes his concerns in a free expression
situation. Initially, because of naivete of the coun-
selor, more oblique or indirect overtures may be useful
in opening conversational avenues. Finally, the assess-
ment of outcomes, while more obvious in some instances,
is likely to demand more developmental data and re-
search efforts than cases where educational or vocational
decisions furnish some evaluative evidence.

117

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118

CONFERENCE SUMMARY

Dr. Henry L. Isaksen

One of the small discussion groups indicated that
the leader, whoever he may be, should be a change agent;
he should be in a position to effect changes in order to
improve the educational program. You don't want to waste
a good counselor or psychologist on routine administrative
tasks. The person who becomes a change agent frequently
has the responsibility for all of these routine adminis-
trative tasks.

What qualifications should this person have? Frankly,
I don't think that it matters whether he is a psychologist,
a social worker, a counselor, or a speech therapist by
training, as long as he has the total picture. I'm a
little biased, but I think that a good counselor is more
apt to have this than a psychologist, or a social worker,
or a speech therapist, because of the nature of his train-
ing and background and, usually, because he has been a
teacher. I don't think that a counselor should be re-
quired to have been a teacher before he becomes a counselor,
but if we do require it of the counselors we should also
require it of the psychologists, social workers, and
speech therapists.

The question is with communication, of course. Dr.
Cottingham touched on that; many of us have mentioned it.
We need to communicate more effectively.

May I inject one point which I feel we need to con-
sider. I believe we, as educators, are too defensive.
We have been too anxious to present a good picture. We
have been too anxious to convince the public that we are
doing a good job. As a matter of fact, we're doing a
poor job! We're still losing about one out of four as
dropouts and we're losing another one out of four as

119

"sit-ins" who are getting absolutely nothing out of
their educational program. We're only batting about
500. Now, in baseball that's not bad, but in ed-
ucation where we are supposed to be educating 100%,
it's pretty poor, and I think we'd better quit kid-
ding ourselves and the public about how adequate
our schools are.

The point was made that we are still tremend-
ously understaffed in elementary schools. The amount
of money that is wasted in our educational systems
must be salvaged. The only way to save it, it to
put more in. I think that economists in our society,
the taxpayers included, would be able to understand
that point if we weren't so careful to shield them
from the real facts about how we are failing on so
many fronts in our educational program.

Certainly, the emphasis should be on prevention;
we should not make the mistakes in the elementary
program that we made in the secondary program; and
certainly every guidance worker should be aware of
readiness. I was a little concerned that little
attention has been given to the other side of the
educational coin-program flexibility. If many of
the students in our schools are poorly placed, if
they are expected to do work beyond their maturity
level, why not change the program instead of keeping
the same rigid outmoded system that we now have of
pushing the children back down the line. You know,
if you push that to its ultimate conclusion, it has
a domino effect. Take all the children in the sixth
grade who aren't really ready for that grade and
put them back in the fifth; there are some in the
fifth grade who aren't quite ready for the fifth;
and you push them back to the fourth, etc. The
parents would never approve of this since ultimately,
you would be returning the kindergarten children to
their homes.

120

There is a basic error in not recognizing that the schools can adapt to the child as well as the child adapting to the school. I believe that repeating grades under our present system is damaging. The research cited supports that position.

Now, a few comments regarding Dr. Hill's presentation. I agree that we should take the incidental out of our present pupil personnel services programs. I like the statement that elementary counselors are called consultants, because counselors in secondary schools are really assistant principals. But I don't really think calling them consultants solves the problem. The solution is to get the secondary counselors to quit being administrators, and to recognize that there is a need for counselors as well as administrators at the secondary level. I believe the wide spread attention to the ASCA statement of the counselor's role is having an impact.

I was a little disturbed by Dr. Cottingham's note: "That if we had enough teachers and enough teacher aides, we wouldn't need any counselors." My answer to that is that teaching and counseling are not the same function. I like the idea of recognizing the differences and of organizing the educational program in such a way that we can implement the differences. Certainly the lack of structure gives us an opportunity to be imaginative and I hope we'll grasp that. My plea is that we recognize the counselor as more than just a "good guy", undifferentiated in duties from the teacher or principal. We as counselors are providing an essential service which is distinct from those services provided by the teacher and principal. That, to me, is the key to the success of our elementary school guidance programs.

121

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